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USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK. VOLUME 82. B-52H AIR--ETC(U)
FEB 77 R G POWELL

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Volume 82

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9 Technical rept.,

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USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

Volume 82,

B-52H Aircraft, Near and Far-Field Noise

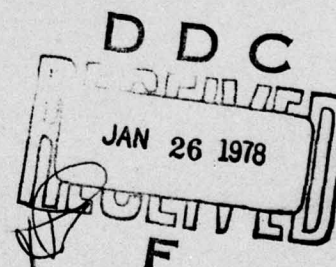
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AEROSPACE MEDICAL DIVISION
AIR FORCE SYSTEMS COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

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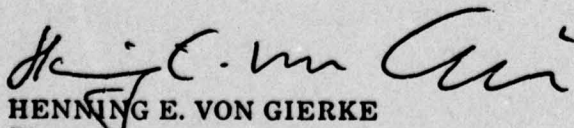
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FOR THE COMMANDER



HENNING E. VON GIERKE
Director

Biodynamics and Bionics Division
Aerospace Medical Research Laboratory

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The USAF B-52H aircraft is a strategic bomber powered by eight TF33-P-3 turbofan engines. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runup pad for five engine/power configurations. Near-field data are reported for ten locations in a wide variety of physical and psychoacoustic measures: overall and band sound pressure levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise level, and		

limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, Under Project/Task 723104, Measurement and Prediction of Noise Environments of Air Force Operations.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Capt Nick Farinacci and Mr. Robert Lee for their assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. David Eilerman of the University of Dayton for assistance in the mechanics of data processing and, Mrs. Norma Peachey and Mr. Mike Patterson for assistance in typing and preparation of the graphics.

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INTRODUCTION

The USAF B-52H Stratofortress is a strategic bomber-type aircraft powered by eight TF33-P-3 turbofan engines. The aircraft was manufactured by the Boeing Company and the engines by United Aircraft, Pratt and Whitney Division.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the B-52H aircraft.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15°C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2* (references 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

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1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.
 2. Cole, John N., *USAF Bioenvironmental Noise data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975.
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NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the B-52H aircraft during ground runup operations of its turbofan engines and ground support equipment. For these tests the aircraft was located on a parking apron at Wright-Patterson AFB with other aircraft parked nearby. Table 1 gives the surface meteorological conditions and the eight engine, ground support equipment, and power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crewmember's head would normally be located. He recorded all of the noise samples on magnetic tape. During analysis of each sample, he determined the root-mean-square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location. Figure 1 shows the ten near-field locations where ground crew are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations in the near-field are difficult since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test condition A.

RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the B-52H aircraft at the eight ground crew locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measures given in Table 3, which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are for the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

TABLE 1
MEASUREMENT LOCATIONS AND TEST CONDITIONS
FOR NEAR-FIELD NOISE MEASUREMENTS

B-52H Aircraft, Ground Runup, Wright-Patterson AFB,
22 August 1973

Ground Crew Location

1	Operator MD-3M (Power Unit)
2	Operator MA-1A (Generator Set)
3	Engine #4 Fire Guard
4	Engine #5 and 6 Fire Guard
5	Engine #7 and 8 Fire Guard
6	Engine #3 Fire Guard
7	Engine #1 and 2 Fire Guard
8	Trim Adjustment
9	Trim Personnel
10	Fire Guard

Aircraft Engine and Support Equipment Operation

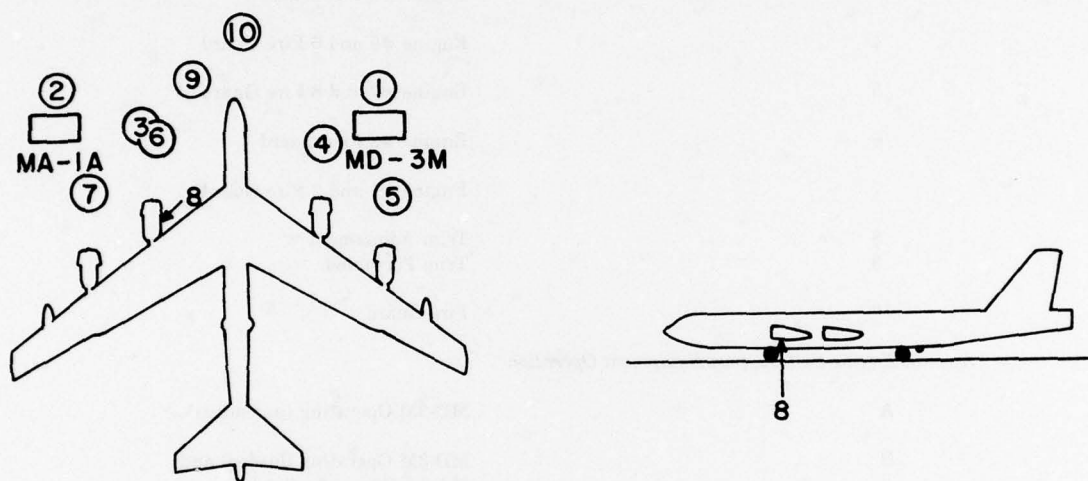
A	MD-3M Operating (unloaded)
B	MD-3M Operating (loaded) and MA-1A Operating (loaded)
C	Engine #4 Idle Power and MD-3M and MA-1A Operating (loaded)
D	Engine #4 80% RPM, Engines 5 and 6 Idle Power, MA-1A and MD-3M Operating (loaded)
E	Engine #4 80% RPM, Engines 5 thru 8 Idle Power, MA-1A and MD-3M Operating (loaded)

Aircraft Engine Operation

F	Engine 4 80% RPM, Engines 3, 5 thru 8 Idle Power, MA-1A and MD-3M Operating (loaded)
G	All Engine Idle Power, MA-1A and MD-3M Operating (loaded)
H	Engine #4 95% RPM, All Others Idle Power, MD-3M (unloaded)
I	Engine #4 101% RPM, All Others Idle Power, MD-3M Operating (unloaded)

Meteorology

Temperature	11.7 C
Bar Pressure	0.776 M Hg
Rel Humidity	93 %



**Figure 1. Near-Field Microphone Locations at
Wright-Patterson AFB OH**

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired the far-field data during a 1-hour test period, thus keeping similar meteorological conditions throughout the test. Figure 2 shows the ground runup pad, ground cover, aircraft orientation and the 19 microphone measurement sites on a semicircle. The center of the 75 meter radius semicircle used in surveying the TF-33-P-3 engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through both inboard engine pods' exhaust-nozzle exits. The ground runup pad did not have a blast deflector; therefore, the engines' exhausts were in a "free-flow" condition.

Table 4 provides cockpit readouts of engine characteristics (% RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of the source where the sound wave-fronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand-held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone.

RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the B-52H aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power level and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure which describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

Estimates of the noise levels for intermediate power conditions (e.g., 88% engine core speed) and/or a different number of engines operating (e.g., three engines) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Except for idle power, data are not always presented beyond the 150 degree location because of turbulent air flow behind the aircraft. Typically, the A-weighted levels for these missing angles are 10 to 20 dBA below those at the last measured location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating.

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

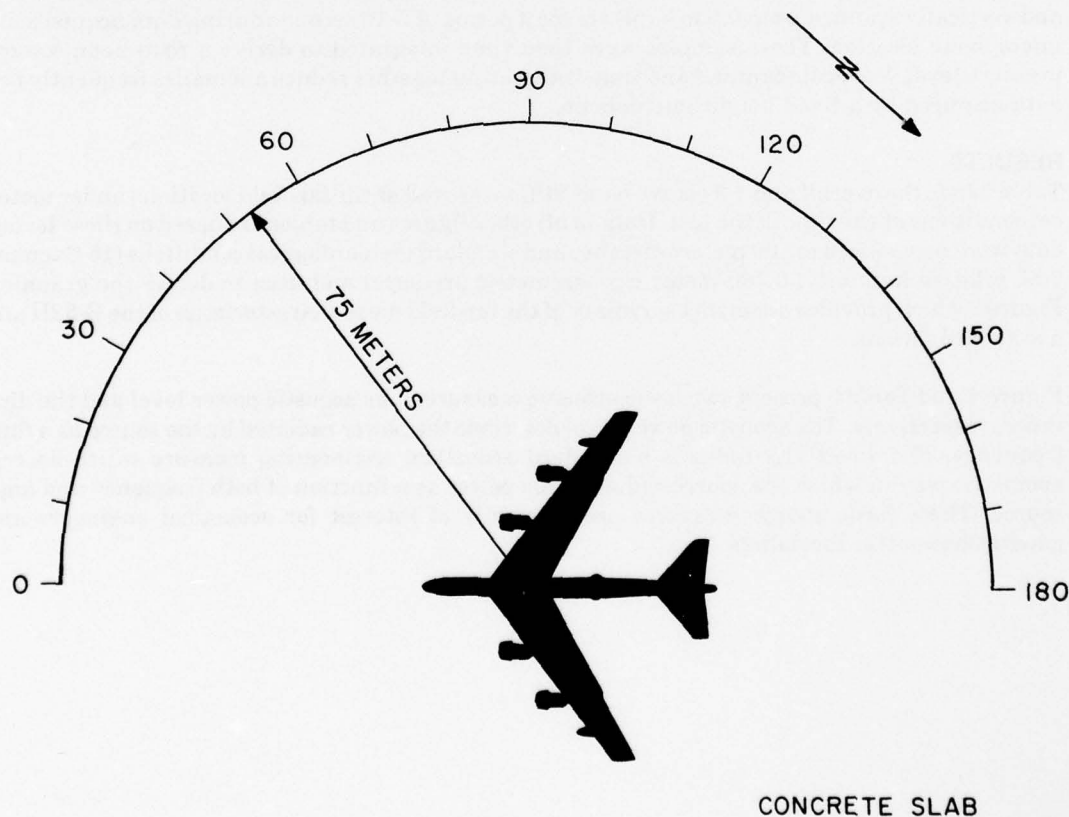


Figure 2. Far-Field Microphone Locations on Taxiway at Wright-Patterson AFB, OH

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)										
2										
OCTAVE BAND										
IDENTIFICATION:										
NOISE SOURCE/SUBJECT: (OPERATION:)										
B-52H AIRCRAFT ()										
GROUND CREW ()										
NEAR FIELD NOISE LEVELS ()										
LOCATION/CONDITION										
FREQ (HZ)	1/A	2/B	3/C	4/D	5/E	6/F	7/G	8/H	9/I	10/I
31.5	86	87	88	92	95	96	95	111	102	99
63	101	95	93	98	99	102	98	116	106	106
125	107	107	98	102	100	100	97	120	112	110
250	104	108	101	99	98	106	99	123	110	108
500	98	112	104	103	102	108	104	126	111	107
1000	96	104	112	115	113	117	115	125	114	112
2000	92	99	111	113	111	126	111	131	113	111
4000	87	101	110	112	112	120	112	138	116	114
8000	83	113	112	108	105	120	108	139	115	112
OVERALL	110	117	118	119	117	120	118	142	122	120

TABLE: MEASURES OF HUMAN NOISE EXPOSURE									
3									
IDENTIFICATION:									
OMEGA 3.2									
TEST 73-055-010									
RUN 01									
27 NOV 74									
PAGE H1									
LOCATION/CONDITION									
1/A 2/B 3/C 4/D 5/E 6/F 7/G 8/H 9/I 10/I									
HAZARD/PROTECTION									
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR									
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR									
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)									
NO PROTECTION									
OASLC	110	116	117	119	117	128	118	140	121 119
OASLA	102	114	118	119	118	129	119	142	122 119
T	21	2.7	P	P	P	P	P	P	P
MINIMUM QPL EAR MUFFS									
OASLA*	87	93	91	91	90	101	91	116	97 94
T	285	101	143	143	170	25	143	P	50 85
AMERICAN OPTICAL 1700 EAR MUFFS									
OASLA*	83	89	86	85	84	95	85	111	92 89
T	571	202	339	404	480	71	404	4.5	120 202
V-51R EAR PLUGS									
OASLA*	79	89	90	92	90	98	91	111	93 91
T	960	202	170	120	170	42	143	4.5	101 143
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS									
OASLA*	66	75	78	80	78	86	79	100	81 78
T	960	960	960	960	960	339	960	30	807 960
H-133 GROUND COMMUNICATION UNIT									
OASLA*	77	85	91	93	91	100	92	115	94 92
T	960	404	143	101	143	30	120	2.2	85 120
COMMUNICATION									
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)									
PSIL	95	105	109	110	109	117	110	127	113 110
ANNNOYANCE									
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB)									
TONE CORRECTION (C IN DB)									
PNLT	117	128	132	134	133	146	134	159	138 135
C	1	1	2	3	2	3	2	3	1 1

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.
P ADDITIONAL EAR PROTECTION REQUIRED.

TABLE 4
TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

B-52H Aircraft, Ground Runups, Wright-Patterson AFB

Aircraft Engine Operation

Idle	All Engines 1.05 Effective Pressure Ratio 60% RPM, High Pressure Compressor 250 C, Exhaust Gas Temperature 1000 LBS/HR Fuel Flow
80% runup (All other engines idle)	#4 Engine 1.08 EPR 80% RPM, NC 300 C, EGT 1900 LBS/HR FF
95% Runup (All other engines idle)	#4 Engine 1.33 EPR 95% RPM, NC 380 C EGT 5000 LBS/HR FF
Maximum Power (All other engines idle)	#4 Engine 1.68 EPR 104 % RPM NC 505 C EGT 8700 LBS/HR FF
Normal Rated Thrust	All Engines 1.62 EPR 100 % RPM NC 450 C EGT 7600 LBS/HR FF

Meteorology

Temperature	18 C
Bar Pressure	29.83 M Hg
Rel Humidity	58 %
Wind — Speed	Calm

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																			
1/3 OCTAVE BAND																			
DISTANCE = 75 METERS																			
NOISE SOURCE/SUBJECT:																			
(OPERATIONS:																			
(IDLE																			
(60% RPM																			
(ALL ENGINES																			
(FREE FLOW																			
METEOROLOGY:																			
(TEMP = 18 C																			
(BAR PRESS = .758 M HG																			
(REL HUMID = 58 %																			
IDENTIFICATION:																			
(OMEGA 1-4																			
TEST 75-044-001																			
RUN 01																			
28 MAY 76																			
PAGE 2																			
FREQ (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	72	72	71	70	70	71	73	73	72	73	75	74	74	74	72	72	73	72	68
31.5	74	76	74	74	77	78	79	77	76	78	78	78	79	78	79	74	73	72	69
40	76	76	78	76	76	76	77	77	78	78	79	80	78	78	77	76	74	71	68<
50	76	78	77	76	78	78	78	78	80	80	80	78	79	79	77	72	70	74	69<
63	77	77	76	77	76	78	81	79	79	78	80	80	78	78	77	72<	70<	71<	80
80	75	75	75	74	75	75	76	76	76	77	77	76	75	75	74	69<	68<	70<	67<
100	78	78	78	77	78	79	78	80	78	78	76	77	78	76	76	73	68<	71<	68<
125	80	80	78	78	78	78	78	77	78	80	77	77	77	77	77	72	65<	71	62<
160	80	79	80	79	79	79	79	77	78	78	77	77	76	79	77	70	63<	67	61<
200	79	79	78	78	78	78	79	79	80	80	79	79	79	79	78	72	59<	63<	59<
250	79	80	80	79	79	78	80	80	79	80	80	78	78	77	76	72	57<	57<	59<
315	77	78	78	76	77	75	76	76	76	76	77	78	77	75	73	69	55<	56<	
400	80	81	81	79	79	78	79	77	76	78	76	78	75	76	73	69	59<	56<	
500	83	83	84	83	83	83	82	79	79	79	77	77	78	77	76	72	69	60<	57<
630	84	84	86	84	83	84	83	80	78	78	77	77	79	77	74	71	61	61	58
800	82	84	84	84	82	83	84	78	79	77	77	77	78	76	74	71	60	62	60
1000	93	96	94	94	93	95	96	89	90	86	86	85	88	86	84	80	70	73	70
1250	92	96	94	96	93	93	96	88	90	85	86	83	86	86	83	78	68	68	66
1600	86	86	87	87	85	85	85	81	81	78	77	77	78	75	73	70	61	59	58
2000	91	91	92	92	91	89	91	85	85	82	81	82	82	80	78	72	64	64	61
2500	88	89	88	89	90	87	88	83	83	81	80	81	81	79	76	71	63	62	58
3150	92	91	91	91	91	90	89	87	87	83	84	84	85	81	79	74	65	63	60
4000	87	88	88	88	87	85	87	83	83	82	82	82	82	80	77	71	62	60	58
5000	86	86	87	86	86	85	85	82	81	79	79	82	82	79	74	69	59	58	55
6300	81	82	83	82	82	81	82	79	77	76	76	77	79	74	71	65	54	53	50
8000	78	80	79	79	78	78	79	75	74	73	74	75	77	73	69	63	52	50	47
10000	70	71	72	72	71	71	72	69	69	68	68	69	72	66	64	56	45	44	41<
OVERALL	100	101	101	101	100	100	101	96	96	94	94	94	95	93	91	87	81	82	82

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																			
1/3 OCTAVE BAND																			
DISTANCE = 75 METERS																			
NOISE SOURCE/SUBJECT:																			
(8-52H AIRCRAFT																			
(TF33-P-3 ENGINE																			
(FAR FIELD NOISE																			
(OPERATION:																			
(80% RPM ENGINE RJNUP																			
(ENGINE NO. 4																			
(FREE FLOW																			
(
METEOROLOGY:																			
TEMP = 18 C																			
BAR PRESS = .758 H HG																			
REL HUMID = 58 %																			
(
IDENTIFICATION:																			
OMEGA 1.4																			
TEST 75-044-001																			
RUN 02																			
28 MAY 76																			
PAGE 2																			

FREQ	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
(HZ)																			
25	75	73	74	73	72	74	75	75	75	76	75	78	77	77	76	73	73		
31.5	77	77	75	74	77	79	78	78	78	79	82	80	77	80	80	76	72		
40	77	79	77	80	80	80	80	80	78	79	82	84	82	81	82	81	77	71	
50	78	78	81	83	81	81	82	82	84	82	83	84	82	81	79	74	68		
63	79	78	81	79	80	81	81	82	83	81	83	84	84	82	81	75	72		
80	77	78	78	78	79	79	79	80	79	79	80	80	79	79	80	73	67		
100	80	80	80	81	81	80	80	83	81	80	82	81	80	79	78	71	65		
125	80	81	80	80	79	80	79	79	79	81	81	80	79	78	78	71	61		
160	83	82	83	82	81	80	81	81	81	81	82	81	79	80	78	71	58		
200	83	83	85	83	83	83	82	83	82	83	82	82	82	80	78	73	58		
250	81	83	83	82	83	83	83	83	83	83	84	84	82	78	76	72			
315	81	81	83	82	81	82	82	81	81	81	81	81	80	79	75	70	59		
400	83	83	84	84	84	83	83	83	83	82	80	80	78	77	73	70	55		
500	83	83	84	84	83	83	81	81	81	80	79	79	79	76	73	68	56		
630	84	85	86	86	84	84	81	82	79	80	79	79	79	77	73	70	59		
800	84	84	84	84	85	84	83	83	80	79	79	79	79	77	73	70	59		
1000	93	93	92	94	93	91	91	88	87	84	86	87	88	85	81	78	70		
1250	93	95	93	95	93	92	92	89	87	85	86	88	88	86	81	75	67		
1500	98	96	98	98	100	100	100	98	91	90	88	90	90	87	81	76	67		
2000	98	97	98	97	100	101	98	94	90	88	87	87	87	86	80	75	66		
2500	90	91	90	91	92	90	88	87	84	83	83	84	84	81	76	71	60		
3150	94	93	94	95	94	93	93	91	89	87	88	88	88	85	78	75	63		
4000	92	92	92	92	94	94	92	90	88	85	86	86	85	83	78	73	62		
5000	90	91	90	91	92	91	91	88	86	85	85	85	85	83	78	71	58		
6300	86	86	87	86	87	87	86	84	82	81	81	82	82	80	75	68	54		
8000	84	85	85	84	86	86	84	82	79	78	79	79	79	77	73	66	52		
10000	78	78	78	77	80	80	78	75	74	73	73	73	73	71	66	58	45		
OVERALL	104	103	104	104	105	105	104	102	99	97	98	98	98	96	92	87	81		
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.																			

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																
1/3 OCTAVE BAND																
DISTANCE = 75 METERS																
NOISE SOURCE/SUBJECT:																
(OPERATION:)																
(95% RPM ENGINE RUNUP)																
(ENGINE NO. 4)																
(FREE FLOW)																
(FAR FIELD NOISE)																
) IDENTIFICATION:																
) OMEGA 1.4																
) TEST 75-044-001																
) RUN 03																
) TEMP = 18 C																
) BAR PRESS = .758 M HG																
) REL HUMID = 58 %																
) PAGE 2																
) METEOROLOGY:																
) ANGLE (DEGREES)																
FREQ	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
(HZ)																
25	79	79	78	79	77	80	81	83	81	83	84	84	87	90	90	86
31.5	82	82	79	79	81	83	84	86	85	87	87	88	89	91	91	88
40	82	82	82	84	83	85	86	88	88	89	89	90	93	93	95	92
50	83	82	85	86	86	86	86	88	89	89	89	92	92	96	95	88
63	85	83	86	85	86	88	88	88	90	90	91	92	96	98	99	86
80	85	85	86	86	90	90	89	89	91	92	92	94	96	98	97	83
100	86	87	87	88	88	89	89	91	92	92	97	94	96	96	97	84
125	88	88	88	88	88	89	90	89	92	92	95	93	96	96	94	86
160	89	89	89	89	88	89	89	91	92	92	93	94	94	94	89	81
200	92	92	91	91	91	93	92	93	92	94	95	95	95	95	87	80
250	89	91	92	93	91	92	93	93	93	92	94	94	93	92	85	80
315	90	93	92	93	94	93	91	92	92	92	92	92	95	90	84	77
400	92	95	95	95	96	94	94	94	93	93	92	92	91	88	82	75
500	94	94	92	92	92	92	92	92	92	90	91	89	91	86	80	75
630	89	92	91	92	92	92	91	91	89	89	89	88	87	86	79	74
800	90	92	92	91	91	91	91	89	88	87	87	88	87	83	78	72
1000	96	97	96	96	96	92	92	90	90	88	89	89	89	85	81	77
1250	97	97	96	98	97	94	94	91	90	89	89	90	89	87	81	75
1600	89	92	94	94	94	93	93	90	89	86	87	86	87	82	76	71
2000	94	97	98	98	98	97	96	94	92	90	91	89	89	85	78	73
2500	102	103	104	105	103	103	104	100	99	98	98	98	98	93	85	79
3150	101	103	104	105	104	105	105	102	101	99	99	100	101	97	90	83
4000	92	96	97	97	97	97	97	97	94	90	91	90	90	87	82	74
5000	93	97	96	98	99	98	99	97	96	94	94	92	92	88	82	74
6300	91	95	95	96	97	97	97	95	95	92	94	92	92	90	85	75
8000	88	92	92	94	96	94	95	93	92	90	90	89	90	87	81	71
10000	83	86	87	88	89	89	89	88	87	84	85	83	84	81	76	67
OVERALL	107	109	110	110	110	110	110	108	107	106	107	107	108	107	105	97

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																	IDENTIFICATION:		
1/3 OCTAVE BAND																	) OMEGA 1.4		
DISTANCE = 75 METERS																	) TEST 75-044-001		
NOISE SOURCE/SUBJECT:																	) RUN 04		
(OPERATION: )																	) TEMP = 18 C		
(MAXIMUM POWER )																	) BAR PRESS = .758 M HG		
(104% RPM )																	) REL HUMID = 58 %		
(ENGINE NO. 4 )																	) PAGE 2		
(FREE FLOW))		
METEOROLOGY:)		
ANGLE (DEGREES))		
FREQ (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	81	83	83	83	82	83	86	88	88	88	88	91	94	98	99	96	88		
31.5	85	84	83	83	88	89	88	91	90	92	91	93	97	98	101	97	85		
40	87	86	85	86	88	90	91	91	93	92	95	96	100	103	102	101	84		
50	88	86	86	90	90	90	91	94	94	95	96	97	100	105	104	95	83		
63	91	89	91	92	92	95	94	95	96	96	98	100	105	108	107	94	80		
80	92	90	93	94	94	95	96	97	98	99	100	101	104	109	106	91	78		
100	94	95	94	95	95	95	97	98	101	100	103	102	105	109	103	93	77		
125	96	96	94	95	97	97	97	97	98	100	103	102	106	109	99	95	75		
160	96	95	94	97	97	95	98	98	100	101	102	103	107	106	99	93	72		
200	98	98	97	97	98	98	100	100	101	100	103	105	108	107	97	89	70		
250	96	96	96	97	98	99	99	100	100	101	102	103	106	106	96	89	67<		
315	96	95	95	97	98	99	98	98	98	99	99	100	103	100	92	86	65		
400	95	95	95	97	99	100	100	100	100	99	99	100	104	100	90	86	66		
500	97	97	97	97	97	99	97	98	97	99	98	98	103	97	89	85	65		
630	95	96	96	96	97	97	97	97	97	96	97	99	103	96	86	83	65		
800	96	94	94	96	96	96	96	95	94	95	96	97	99	92	85	81	62		
1000	97	97	96	97	96	97	96	94	94	94	94	95	97	92	84	81	63		
1250	97	97	95	97	97	96	96	94	94	94	94	96	95	92	83	79	62		
1600	94	93	94	94	94	95	95	94	93	92	93	93	93	88	80	74	59		
2000	96	95	95	95	96	96	96	94	94	93	93	93	93	88	78	73	59		
2500	95	94	94	96	95	97	97	96	95	94	93	93	92	89	78	73	59		
3150	98	97	97	100	99	101	103	102	102	102	98	98	98	93	83	78	63		
4000	95	96	96	99	98	100	102	100	99	98	98	97	97	93	84	78	63		
5000	92	92	93	94	94	95	96	95	95	94	93	92	92	90	78	73	57		
6300	92	91	93	94	94	96	97	97	96	96	95	92	91	88	79	72	55		
8000	89	89	89	91	92	94	95	95	94	92	93	91	91	90	79	72	55		
10000	84	83	83	85	86	88	90	90	89	87	88	84	85	82	72	65	48		
OVERALL	109	108	108	109	110	111	111	111	111	111	112	113	116	117	113	106	92		

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

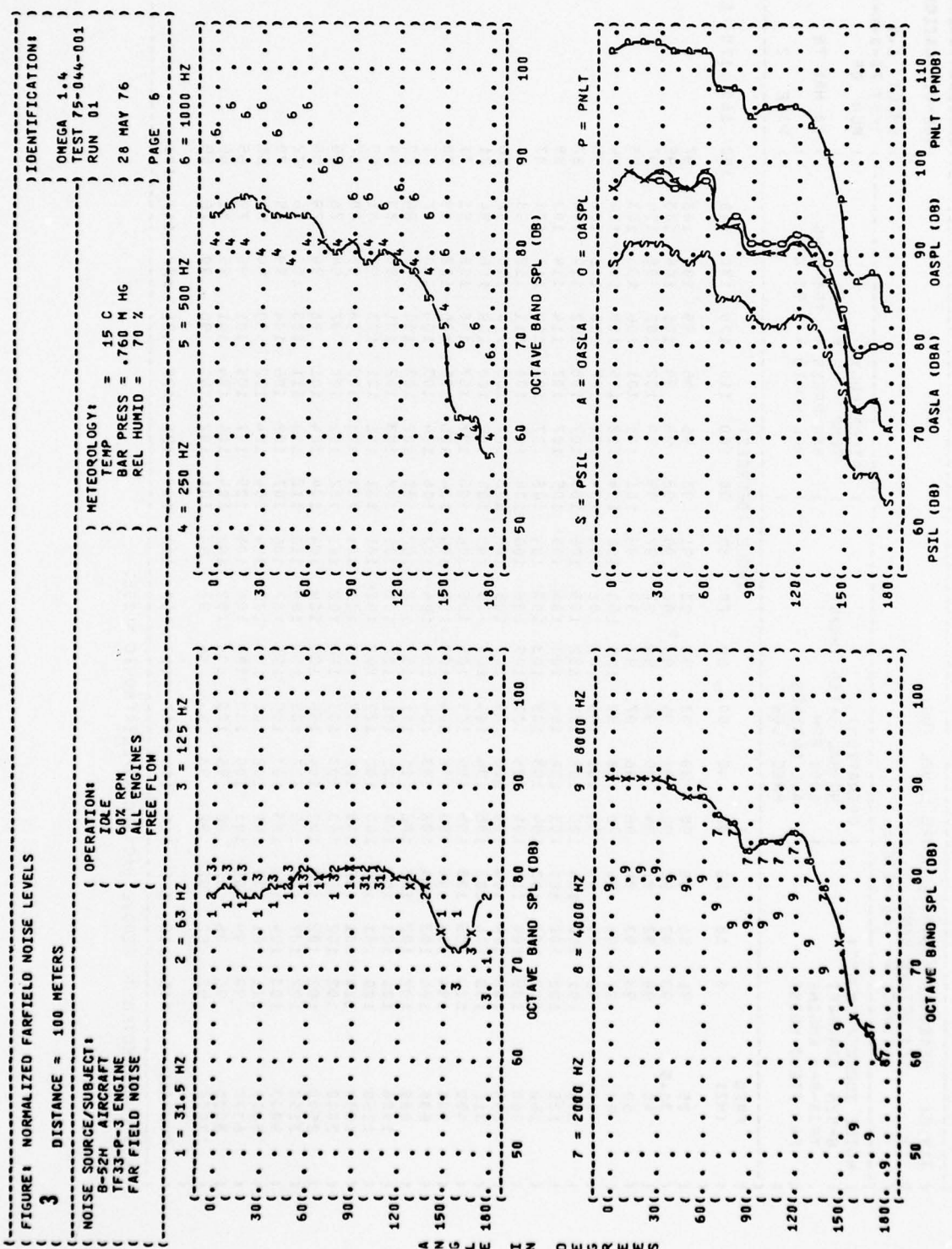


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

B-52H AIRCRAFT

TF33-P-3 ENGINE

FAR FIELD NOISE

OPERATION:

60% RPM ENGINE RUNUP

ENGINE NO. 4

FREE FLOW

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

OMEGA 1.4

TEST 75-044-001

RUN 02

28 MAY 76

PAGE 6

IDENTIFICATION:

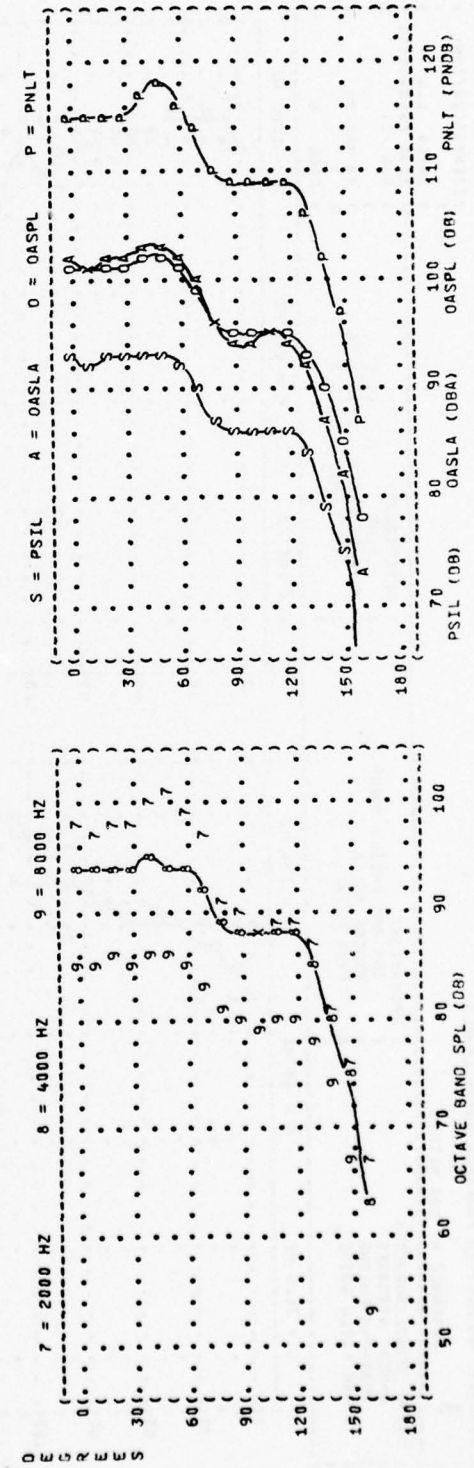
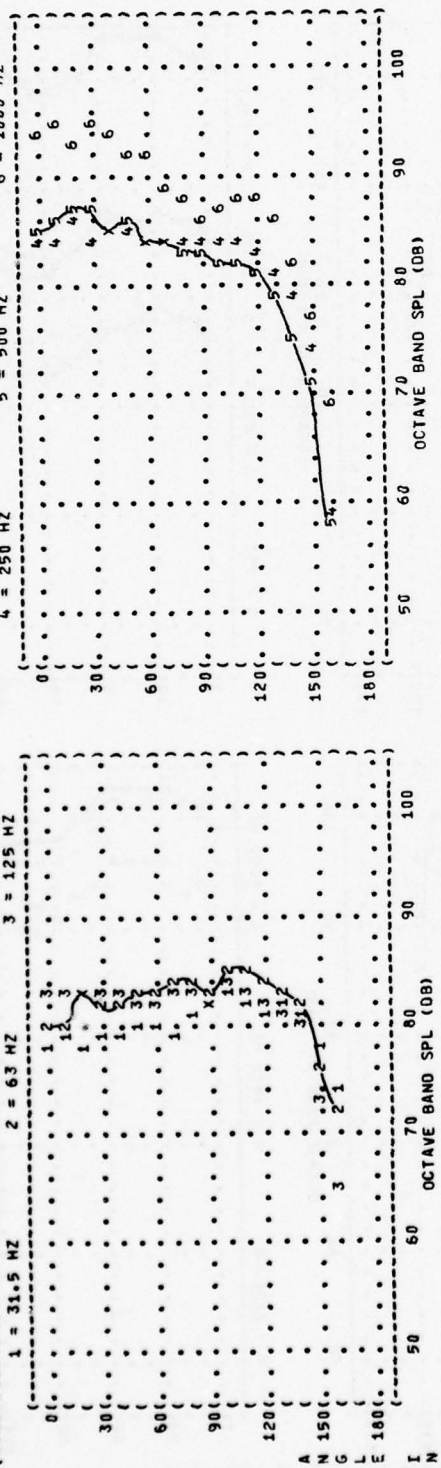


FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

IDENTIFICATION:

OMEGA 1.4

TEST 75-044-001

RUN 03

28 MAY 76

PAGE 6

NOISE SOURCE/SUBJECT:

8-52H AIRCRAFT

ENGINE NO. 4

FREE FLOW

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

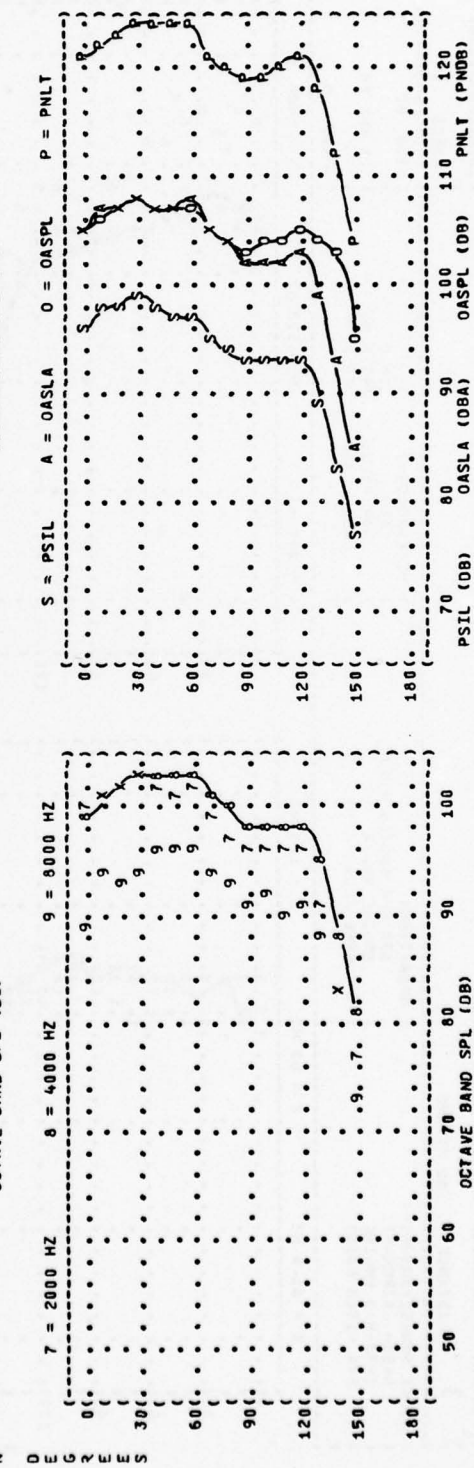
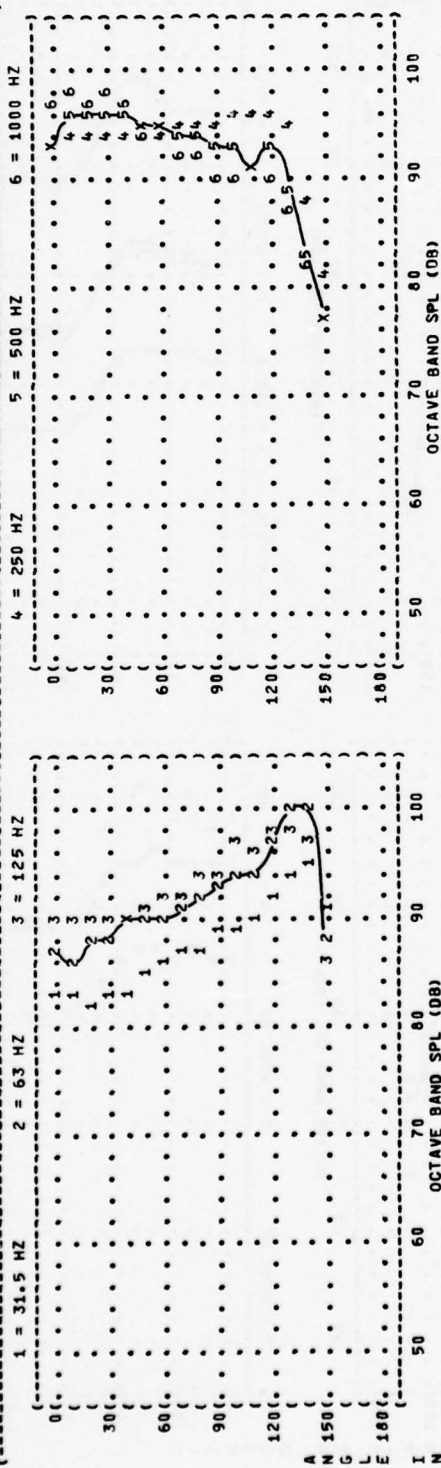


FIGURE: ACOUSTIC POWER LEVEL {PWL}

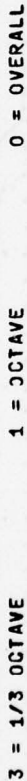


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4

TEST 75-044-001

RUN 02

28 MAY 76

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATION: 80% RPM ENGINE RUNUP

TEMP = 18 C

ENGINE NO. 4

BAR PRESS = .758 M HG

FREE FLOW

REL HUMID = 58 %

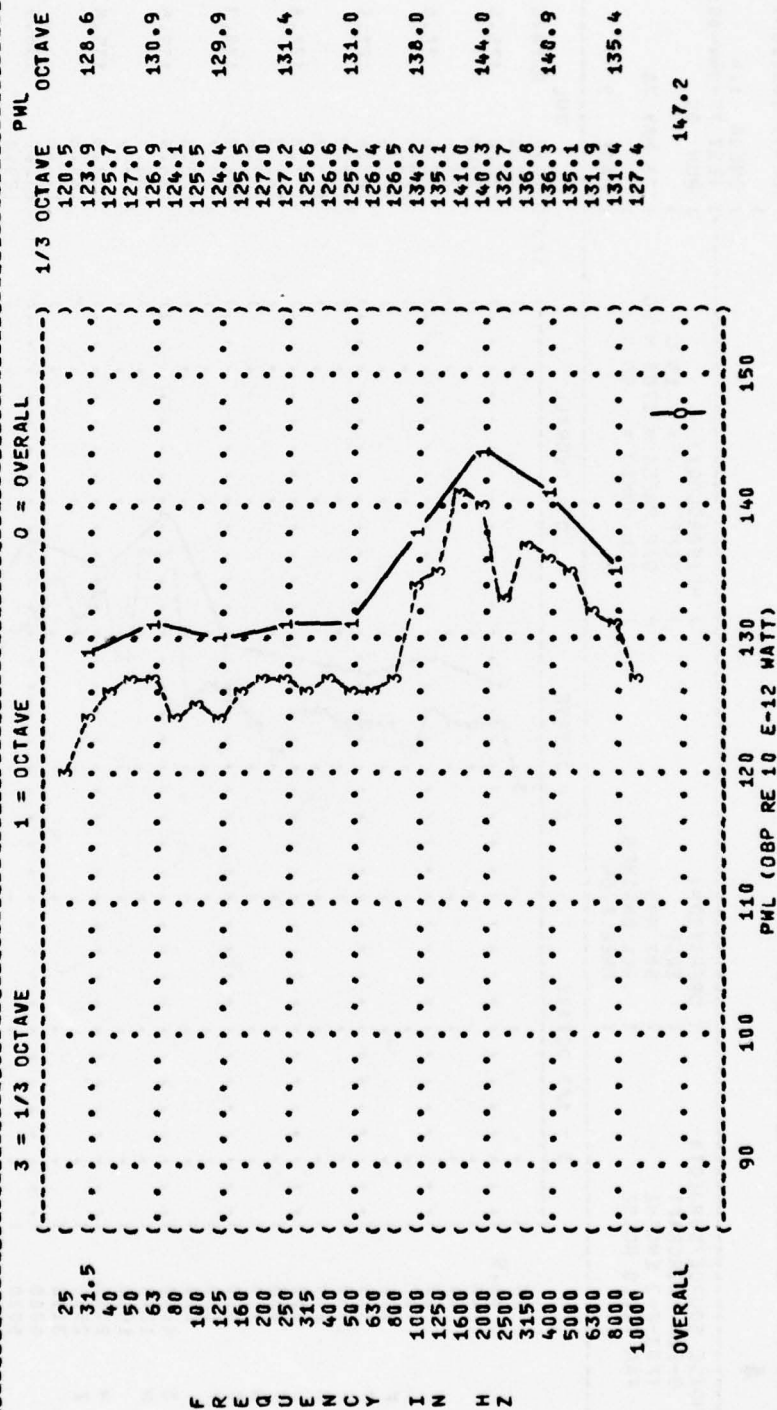


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4

TEST 75-044-001

RUN 03

28 MAY 76

PAGE 3

NOISE SOURCE/SUBJECT:

B-52H AIRCRAFT

TF33-P-3 ENGINE

FAR FIELD NOISE

OPERATION:

95% RPM ENGINE RUNUP

ENGINE NO. 4

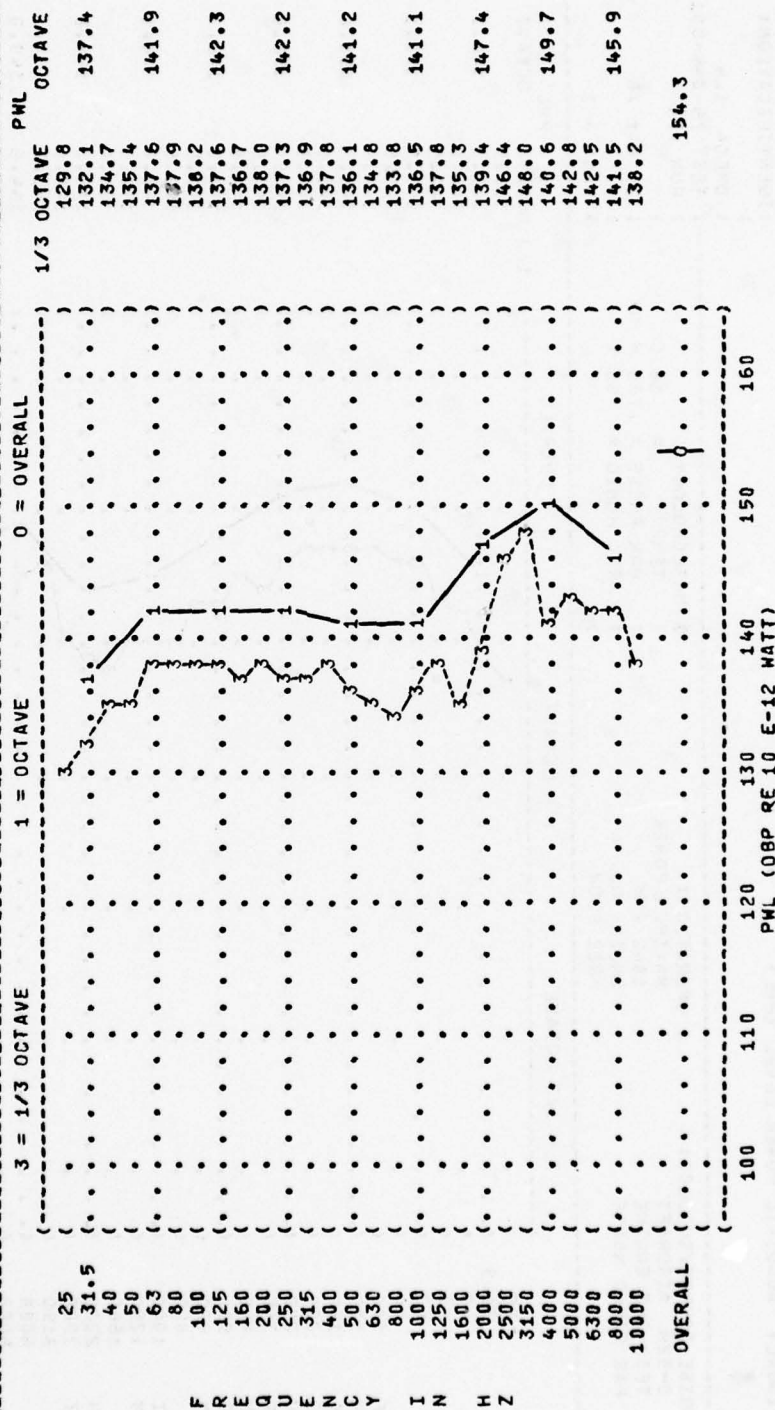
FREE FLOW

METEOROLOGY:

TEMP = 18 C

BAR PRESS = .758 M HG

REL HUMID = 58 %



4	NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:	OMEGA 1.4
	B-52H AIRCRAFT	(MAXIMUM POWER	(TEMP = 18 C	TEST 75-044-001
	TF33-P-3 ENGINE	(104% RPM	(BAR PRESS = .758 M HG	RUN 04
	FAR FIELD NOISE	(ENGINE NO. 4	(REL HUMID = 58 %	28 MAY 76
		(FREE FLOW	(	PAGE 3

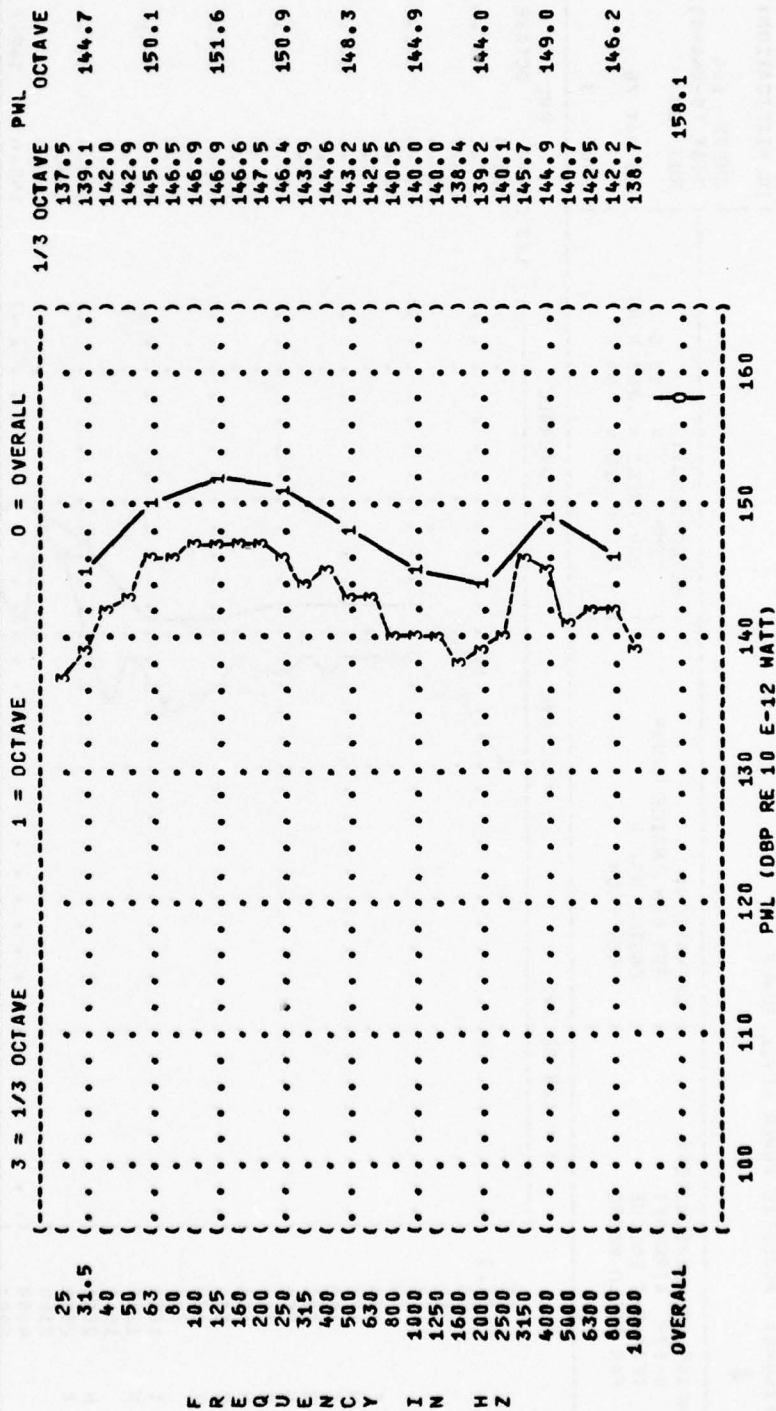


FIGURE 4 ACOUSTIC POWER LEVEL (PWL)

IDENTIFICATION:

OMEGA 1.4

TEST 75-044-001

RUN 05

28 MAY 76

PAGE 3

NOISE SOURCE/SUBJECT:

B-52H AIRCRAFT

TF33-P-3 ENGINE

FAR FIELD NOISE

OPERATION:

NORMAL RATED THRUST

100% RPM

ALL ENGINES

FREE FLOW

METEOROLOGY:

TEMP = 18 C

BAR PRESS = .758 M HG

REL HUMID = 58 %

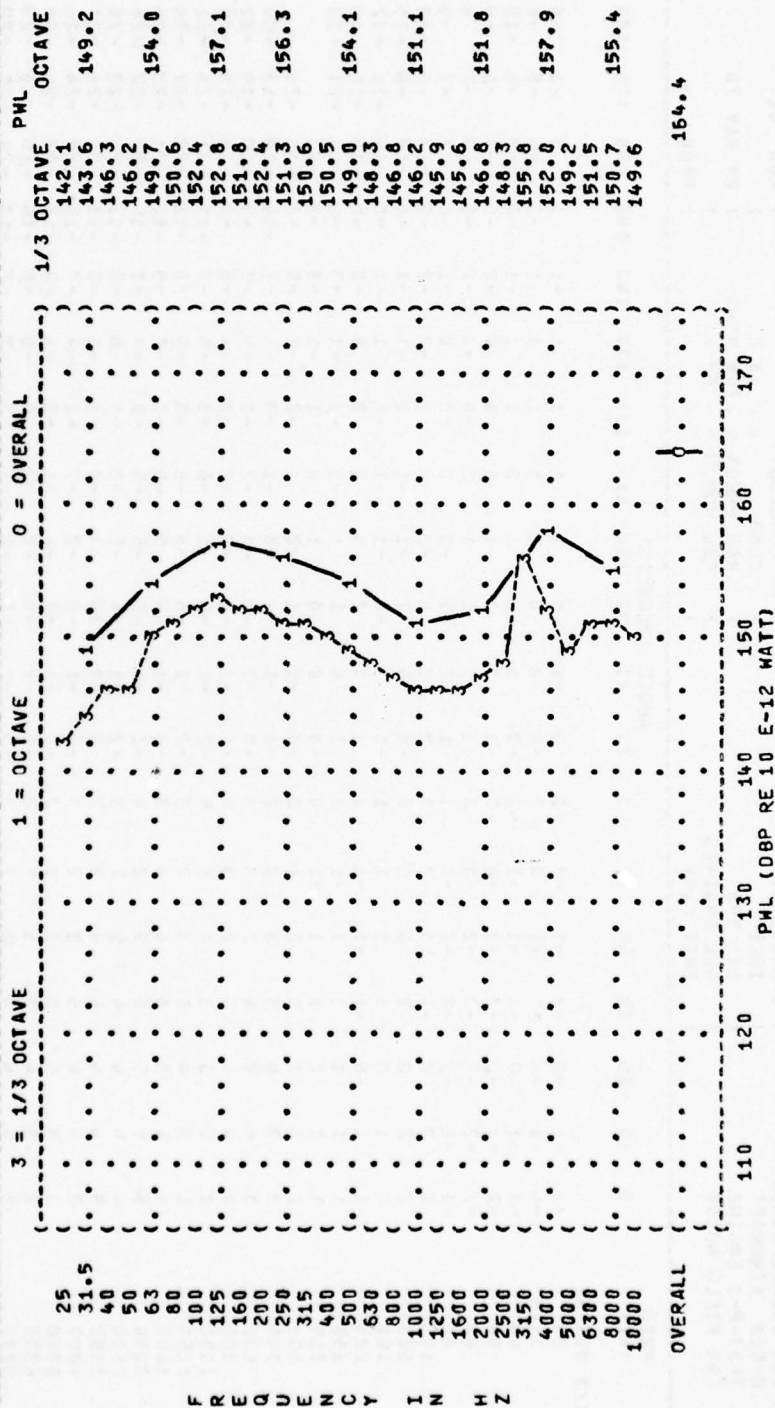


TABLE: DIRECTIVITY INDEX (DB)																	IDENTIFICATION:		
6																	OMEGA 1.4		
NOISE SOURCE/SUBJECT:																	TEST 75-044-001		
B-52H AIRCRAFT																	RUN 01		
TF33-P-3 ENGINE																	28 MAY 76		
FAR FIELD NOISE																	PAGE 4		
OPERATION:																	METEOROLOGY:		
(IDLE)																	TEMP = 18 C		
(60% RPM)																	BAR PRESS = .758 M HG		
(ALL ENGINES)																	REL HUMID = 58 %		
(FREE FLOW)																			
ANGLE (DEGREES)																			
FREQ (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1/3 OCTAVE																			
25	-1	-1	-2	-3	-3	-2	-0	0	-1	-0	2	1	1	1	-1	-1	0	-1	-5
31.5	-4	-1	-4	-4	-1	0	-2	-0	-2	0	1	1	1	1	1	-3	-4	-5	-8
40	-1	-1	0	-1	-1	-1	-0	-0	1	1	1	2	1	1	-1	-2	-3	-6	-10
50	-2	-1	-2	-2	-0	-0	-0	-0	2	2	1	1	0	0	-2	-6	-8	-4	-9
63	-2	-2	-2	-2	-2	-0	2	1	1	-1	1	2	-0	-0	-2	-6	-9	-7	2
80	-1	-1	-0	-2	-0	-0	1	1	2	1	-0	0	0	0	-1	-6	-8	-5	-9
100	0	0	0	-1	0	0	2	0	1	0	-2	-1	1	-2	-5	-10	-6	-10	-10
125	2	2	0	0	0	0	0	-1	0	2	-1	-1	1	-1	-5	-13	-6	-15	-15
160	2	1	2	1	1	1	1	1	1	-0	-1	-1	-2	1	-8	-15	-11	-17	-17
200	1	1	-0	-1	-1	-1	1	1	1	2	0	0	0	0	-6	-19	-16	-19	-19
250	1	1	1	1	1	-1	2	1	0	1	1	0	-0	-1	-3	-6	-21	-21	-19
315	1	2	2	0	1	-1	0	-0	0	1	1	2	1	-1	-3	-7	-21	-21	-21
400	2	3	3	3	3	3	2	-0	-1	1	-2	1	-2	-2	-5	-8	-18	-18	-23
500	3	3	4	3	3	3	3	-0	-1	-1	-3	-1	-3	-4	-7	-10	-19	-19	-22
630	3	4	4	4	4	2	3	-1	-2	-2	-3	-2	-3	-4	-6	-9	-20	-18	-20
800	2	4	4	4	4	3	4	-1	-1	-2	-3	-3	-2	-4	-7	-11	-21	-18	-21
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1600	4	5	5	5	5	4	4	-0	-1	-4	-5	-5	-5	-3	-7	-9	-22	-22	-25
2000	5	5	5	5	5	2	4	-1	-2	-5	-5	-5	-5	-7	-8	-14	-22	-22	-25
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5000	3	3	5	3	3	3	3	-0	-1	-3	-4	-1	-0	-4	-8	-13	-23	-24	-27
6300	2	3	4	3	3	2	2	-0	-2	-3	-3	-2	0	-5	-8	-14	-25	-26	-29
8000	2	4	4	4	4	2	3	-0	-2	-2	-2	-0	1	-3	-7	-13	-24	-26	-29
10000	1	2	2	2	2	1	2	-0	-1	-2	-2	-0	3	-3	-6	-14	-24	-25	-28
OCTAVE																			
31.5	-2	-1	-1	-2	-1	-1	1	-0	-0	0	1	1	1	1	0	-2	-3	-5	-8
63	-2	-1	-2	-1	-1	-0	1	1	1	1	1	1	0	0	-2	-6	-8	-5	-2
125	2	1	1	1	1	1	1	1	1	1	1	-1	0	-0	-1	-6	-12	-7	-13
250	1	1	1	0	0	-1	1	1	1	1	1	1	0	-1	-2	-6	-20	-19	-20
500	3	3	5	3	3	3	2	-0	-1	-1	-3	-1	-2	-3	-6	-9	-19	-23	-23
1000	2	5	4	4	4	4	5	-2	-1	-5	-5	-7	-4	-5	-7	-11	-21	-19	-22
2000	4	4	5	5	5	4	4	-1	-1	-4	-5	-4	-4	-6	-9	-13	-22	-22	-25
4000	4	4	4	4	4	3	3	-0	-1	-3	-3	-2	-2	-5	-8	-13	-22	-24	-27
8000	2	4	4	4	4	2	3	-0	-2	-2	-2	-0	1	-3	-7	-13	-24	-26	-29
OVERALL	3	4	4	4	4	3	4	-1	-1	-3	-3	-3	-3	-4	-6	-10	-16	-15	-15

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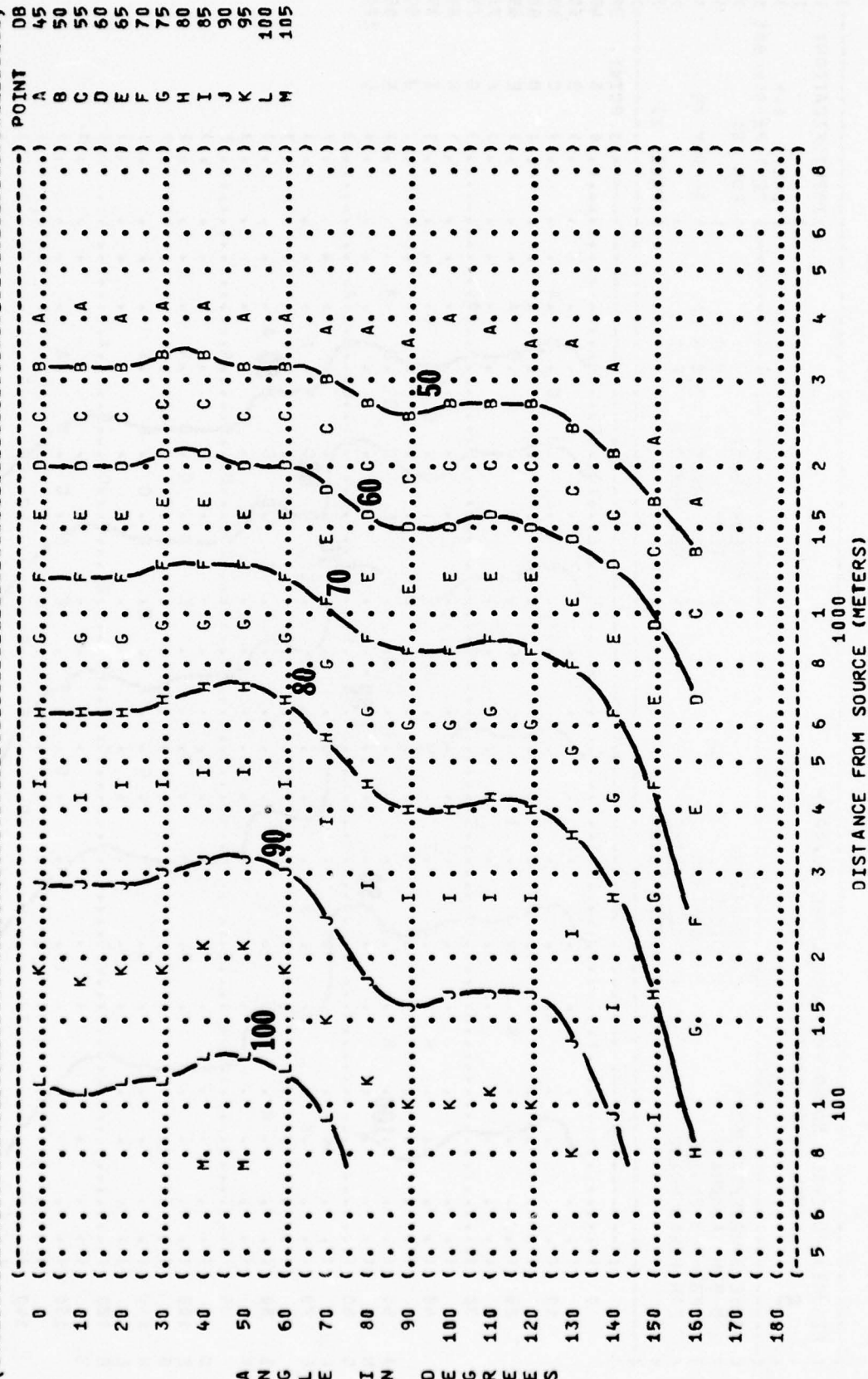
TABLE: DIRECTIVITY INDEX (DB)																	IDENTIFICATION:			
6																	OMEGA 1.4			
																	TEST 75-044-001			
NOISE SOURCE/SUBJECT:																	RUN 03			
(B-52H AIRCRAFT																				
(TF33-P-3 ENGINE																	TEMP = 18 C			
(FAR FIELD NOISE																	BAR PRESS = .758 M HG			
																	REL HUMID = 58 %			
																	PAGE 4			
FREQ	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
(HZ)																				
1/3 OCTAVE																				
25	-6	-6	-6	-6	-7	-4	-4	-1	-3	-2	-0	-0	2	5	6	1				
31.5	-5	-5	-8	-8	-6	-4	-3	-1	-2	0	0	1	2	4	4	1				
40	-8	-8	-8	-6	-6	-4	-3	-4	-2	-1	-1	1	3	3	5	2				
50	-7	-8	-6	-4	-4	-4	-4	-2	-2	-1	-1	1	3	5	7	-3				
63	-8	-9	-7	-8	-6	-5	-5	-5	-2	-2	-2	-1	3	5	7	-7				
80	-8	-8	-7	-6	-3	-3	-3	-3	-2	-1	1	1	3	5	4	-10				
100	-7	-6	-6	-5	-5	-4	-4	-2	-1	-1	4	1	3	3	4	-9				
125	-5	-5	-5	-5	-4	-3	-3	-3	-0	-1	3	1	4	3	2	-6				
160	-2	-2	-3	-2	-4	-2	-2	-1	0	0	2	2	2	2	-3	-10				
200	-0	-1	-2	-2	-0	-0	-0	-0	-1	1	2	2	2	2	-6	-13				
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400	-0	3	3	3	3	1	1	0	1	1	-1	-2	0	-4	-10	-17				
500	-1	3	3	1	2	2	2	1	2	1	-0	-2	0	-5	-11	-16				
630	-0	3	3	3	3	3	3	1	-0	-1	-1	-1	-1	-4	-10	-15				
800	1	4	3	3	5	2	3	1	-1	-1	-1	-2	-2	-6	-10	-14				
1000	5	6	5	5	5	1	1	-1	-1	-3	-2	-2	-4	-5	-11	-17				
1250	4	5	4	6	5	2	2	-2	-2	-4	-3	-2	-2	-7	-13	-19				
1600	-0	3	4	4	4	3	3	0	-1	-4	-2	-4	-3	-7	-13	-19				
2000	1	3	4	5	5	3	2	1	-2	-3	-3	-4	-5	-8	-16	-21				
2500	2	3	4	5	3	3	4	0	-1	-2	-2	-2	-2	-7	-15	-21				
3150	-0	1	2	3	3	3	3	2	0	-2	-2	-2	-1	-4	-11	-19				
4000	-1	2	3	4	3	3	3	2	0	-3	-3	-3	-3	-7	-13	-21				
5000	-3	2	1	3	3	3	4	1	1	-2	-2	-2	-4	-7	-13	-21				
6300	-3	1	1	2	4	2	3	1	1	-2	-0	-2	-2	-4	-9	-19				
8000	-4	1	1	2	4	2	4	1	1	-1	-1	-3	-2	-5	-11	-21				
10000	-3	0	1	2	3	3	3	2	1	-2	-1	-3	-2	-5	-10	-19				
OCTAVE																				
31.5	-7	-7	-8	-6	-6	-4	-3	-2	-2	-0	-0	1	3	4	5	2				
63	-7	-8	-6	-4	-4	-4	-4	-3	-2	-2	-0	0	3	5	5	-6				
125	-5	-4	-4	-4	-4	-3	-3	-2	-0	-1	3	1	3	3	2	-8				
250	-1	-0	-1	0	-0	0	0	0	0	1	1	1	2	0	-7	-13				
500	0	3	3	2	3	2	2	-1	1	0	-1	-2	0	-4	-10	-16				
1000	4	5	5	5	5	3	2	-1	-1	-3	-2	-2	-3	-5	-11	-15				
2000	1	3	4	5	3	3	4	0	-1	-3	-2	-3	-3	-7	-15	-21				
4000	-1	2	2	3	3	3	3	1	1	-2	-2	-2	-2	-4	-9	-19				
6000	-3	1	1	2	2	2	3	1	1	-1	-1	-3	-2	-5	-11	-19				
8000	-3	1	1	2	3	3	3	1	1	-2	-1	-3	-2	-4	-9	-19				
OVERALL	-0	1	2	3	2	2	2	0	-0	-2	-1	-1	-0	-1	-2	-11				

TABLE: DIRECTIVITY INDEX (DB)																	
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NOISE SOURCE/SUBJECT:																	
(OPERATION:)																	
(MAXIMUM POWER)																	
(104% RPM)																	
(ENGINE NO. 4)																	
(FREE FLOW)																	
METEOROLOGY: = 18 C																	
BAR PRESS = .758 M HG																	
REL HUMID = 58 %																	
PAGE 4																	
IDENTIFICATION:																	
OMEGA 1.4																	
TEST 75-044-001																	
RUN 04																	
28 MAY 76																	
PAGE 4																	
ANGLE (DEGREES)																	
FREQ (HZ)																	
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																	
1/3 OCTAVE																	
25																	
31.5																	
50																	
63																	
80																	
100																	
125																	
160																	
200																	
250																	
315																	
400																	
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1250																	
1600																	
2000																	
2500																	
3150																	
4000																	
5000																	
6300																	
8000																	
10000																	
OCTAVE																	
31.5																	
63																	
125																	
250																	
500																	
1000																	
2000																	
4000																	
8000																	
OVERALL																	
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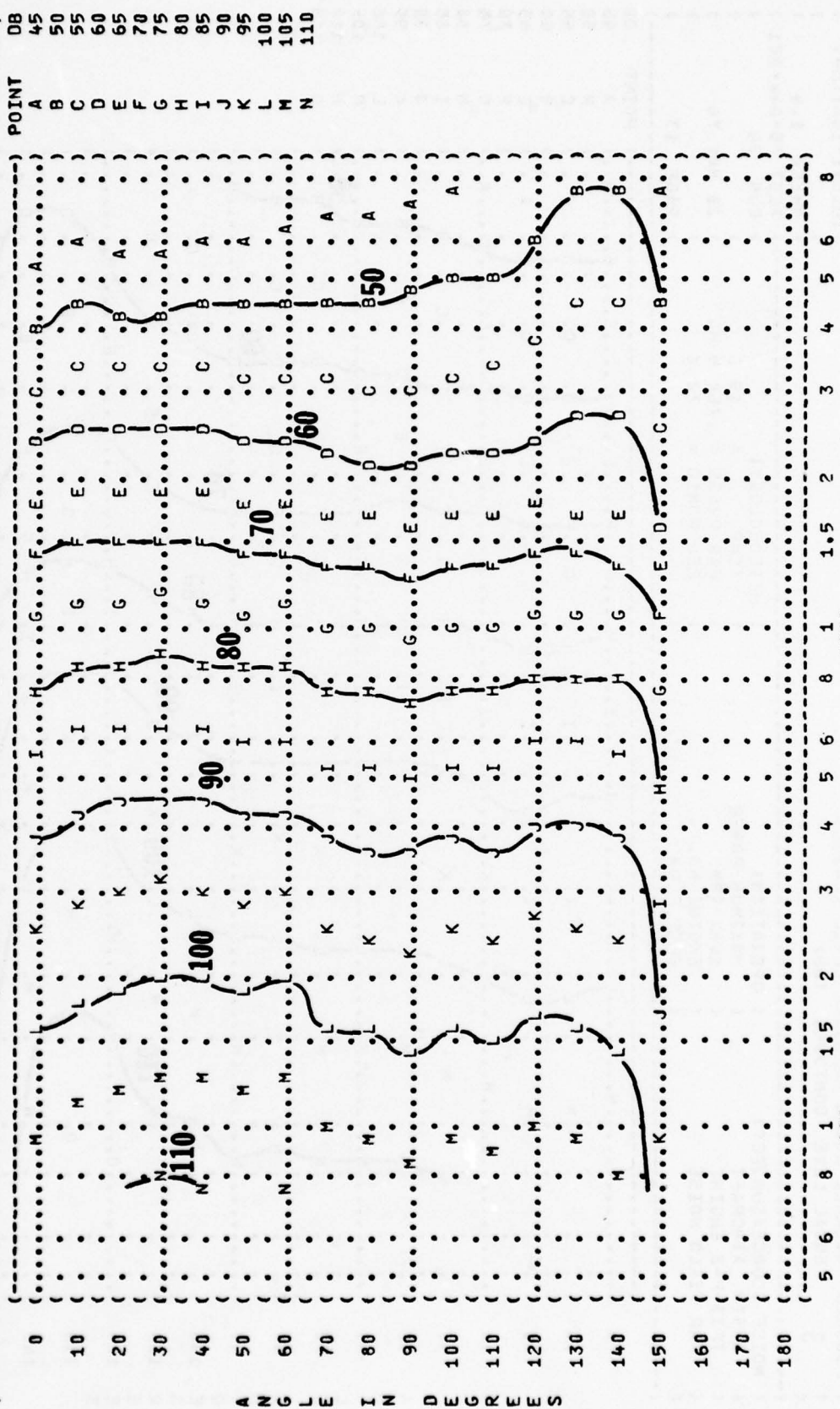
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) RUN 05																		
) 28 MAY 76																		
) PAGE 4																		
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(TF33-P-3 ENGINE																		
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) TEMP = 18 C																		
) BAR PRESS = .758 M HG																		
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0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																		
ANGLE (DEGREES)																		
1/3 OCTAVE																		
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(31.5																		
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(1000																		
(2000																		
(4000																		
(8000																		
OVERALL																		

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(-----)
( FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL) )
( EQUAL LEVEL CONTOURS (DB) )
( 5 )
(-----)
( NOISE SOURCE/SUBJECT: )
( B-52H AIRCRAFT )
( TF33-P-3 ENGINE )
( FAR FIELD NOISE )
( OPERATION: )
( IDLE )
( 60% RPM )
( ALL ENGINES )
( FREE FLOW )
( METEOROLOGY: )
( TEMP = 15 C )
( BAR PRESS = .760 M HG )
( REL HUMID = 70 % )
( IDENTIFICATION: )
( OMEGA 1.4 )
( TEST 75-044-001 )
( RUN 01 )
( PAGE 13 )
(-----)
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(FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL)
 (5
 (EQUAL LEVEL CONTOURS (DB)
 () IDENTIFICATION:)
 () OMEGA 1.4
 () TEST 75-044-001
 () RUN 02
 ()
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:)
 (B-52H AIRCRAFT) TEMP = 15 C
 (TF33-P-3 ENGINE) BAR PRESS = .760 M HG
 (FAR FIELD NOISE) REL HUMID = 70 %
 ())
 () PAGE 13)

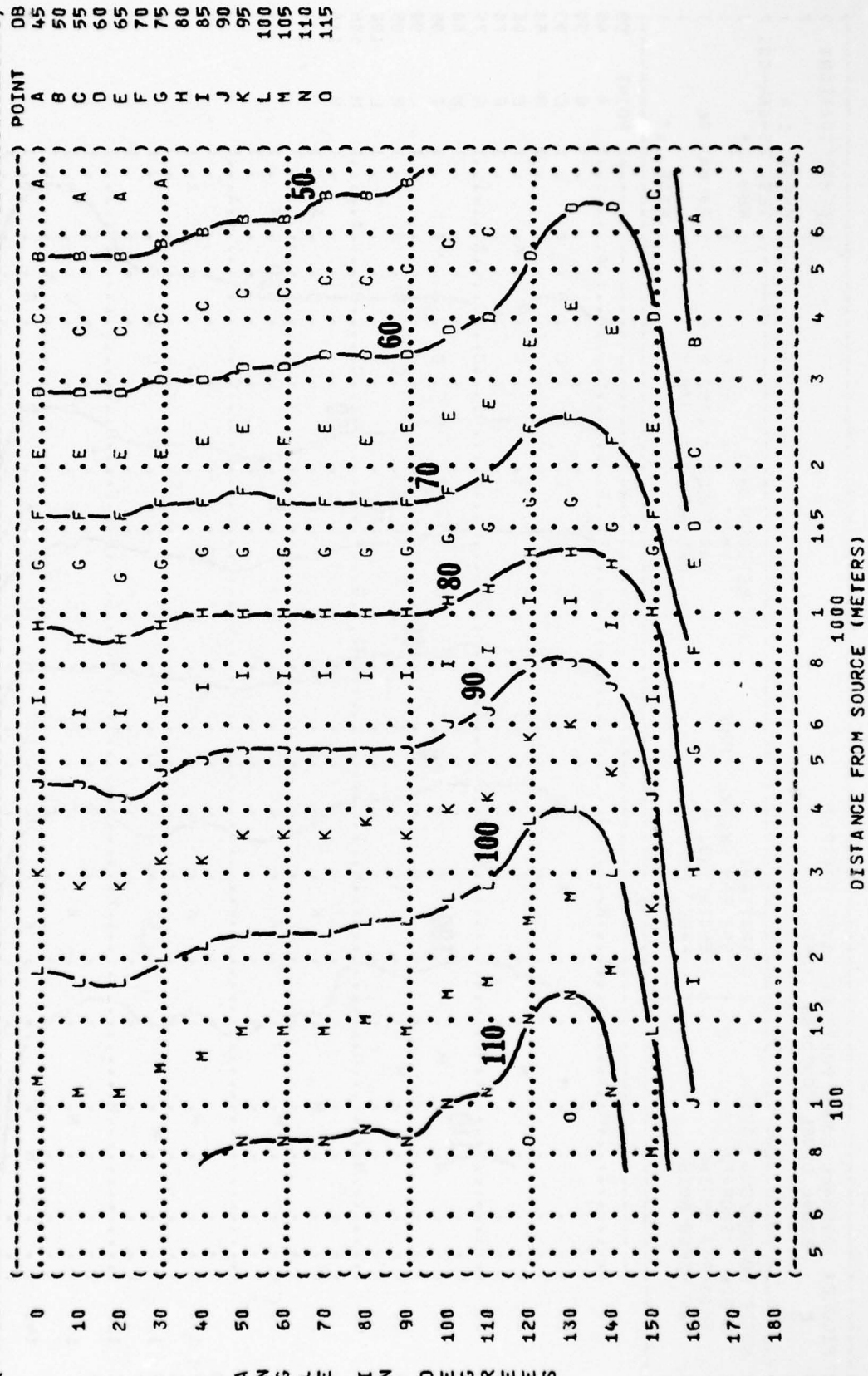


(FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL)
 (5 EQUAL LEVEL CONTOURS (DB)
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-044-001
 () RUN 03
 (NOISE SOURCE/SUBJECT:
 (B-52H AIRCRAFT) METEOROLOGY:
 () TEMP = 15 C
 (TF33-P-3 ENGINE) BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 (FAR FIELD NOISE)
 () PAGE 13



DISTANCE FROM SOURCE (METERS)

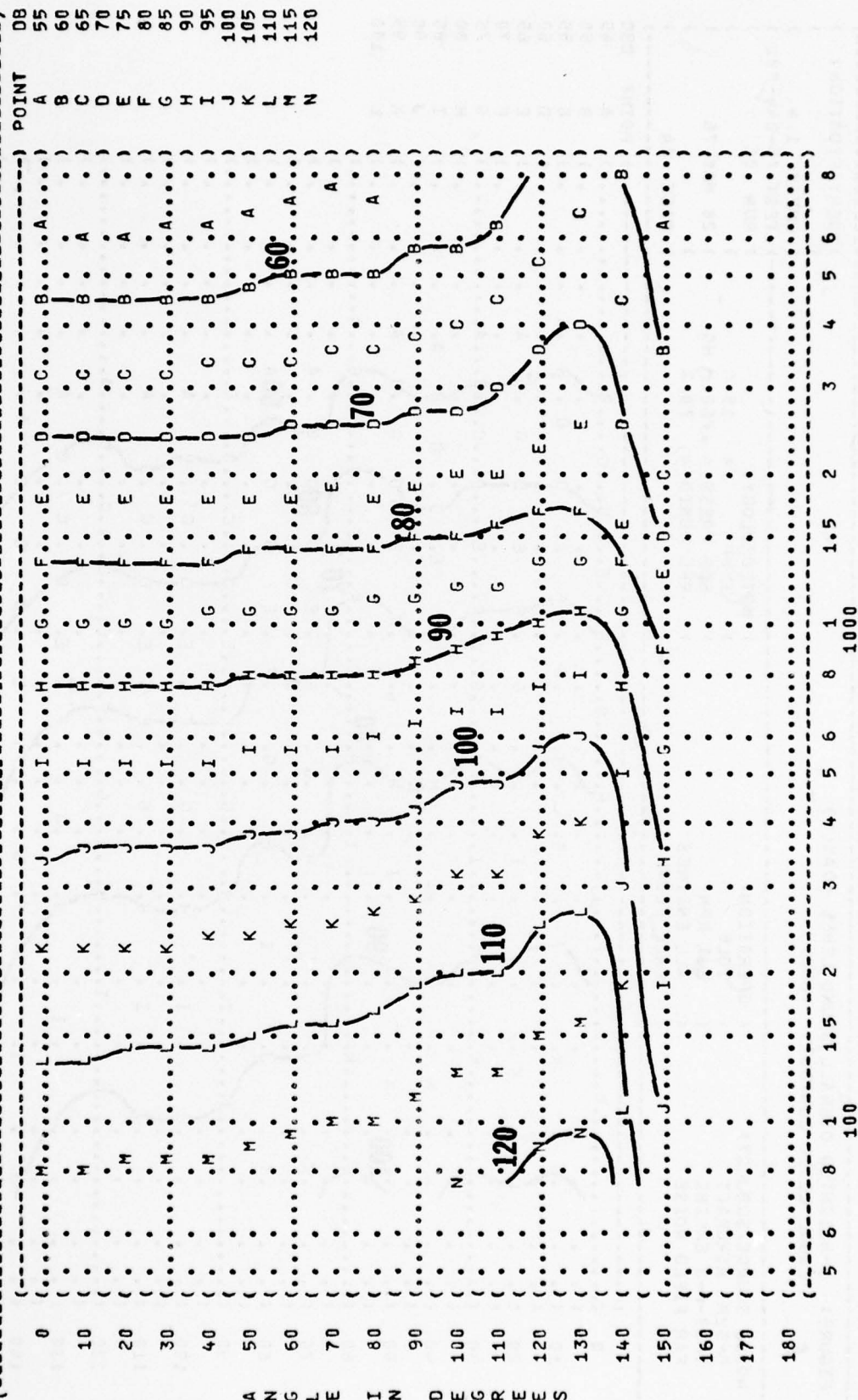
(FIGURE: OVERALL SOUND PRESSURE LEVEL {OASPL}
EQUAL LEVEL CONTOURS (DB)
5
))
(NOISE SOURCE/SUBJECT:
(B-52H AIRCRAFT
(TF33-P-3 ENGINE
(FAR FIELD NOISE
(OPERATION:
(MAXIMUM POWER
(104% RPM
(ENGINE NO. 4
(FREE FLOW
))
(METEOROLOGY:
(TEMP = 15 C
(BAR PRESS = .760 M HG
(REL HUMID = 70 %
()
) IDENTIFICATION:
))
) OMEGA 1.4
) TEST 75-044-001
) RUN 04
) PAGE 13

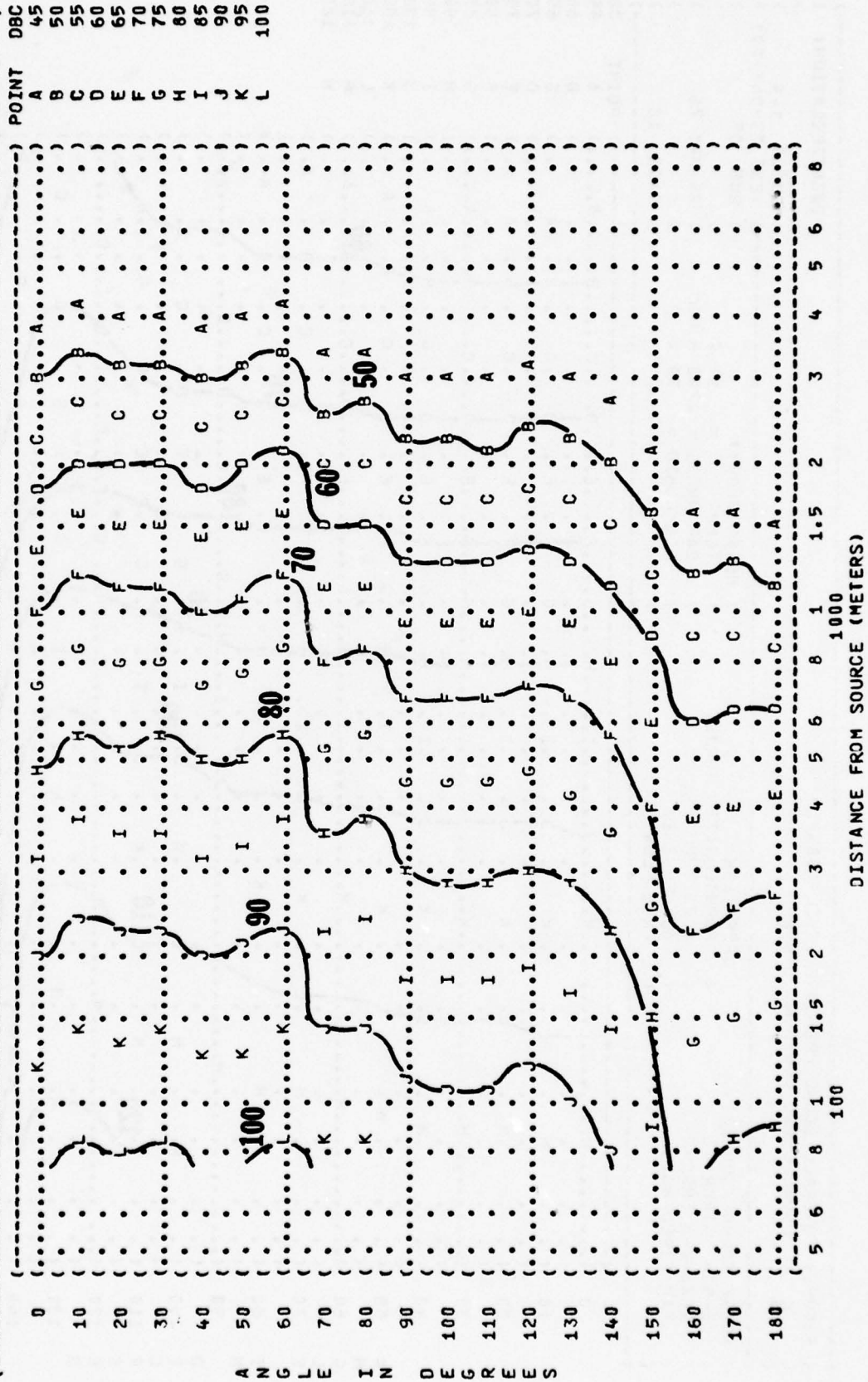


ANGLE IN DEGREES

5

(NOISE SOURCE/SUBJECT:	(OPERATION:	(METEOROLOGY:	(RUN	(
(B-52H AIRCRAFT	(NORMAL RATED THRUST	(TEMP = 15 C	05	
(TF33-P-3 ENGINE	(100% RPM	(BAR PRESS = .760 M HG	28 MAY 76	
(FAR FIELD NOISE	(ALL ENGINES	(REL HUMID = 70 %		
	(FREE FLOW		PAGE 13	



[illegible]

EQUAL LEVEL CONTOURS (DBC)

NOISE SOURCE/SUBJECT:

B-52H AIRCRAFT

TF33-P-3 ENGINE

FAR FIELD NOISE

(X) OPERATION:

(80% RPM ENGINE RUNUP

(ENGINE NO. 4

FREE FLOW

1) METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

0 RUN 02

1

28 MAY 76

2

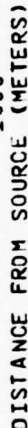
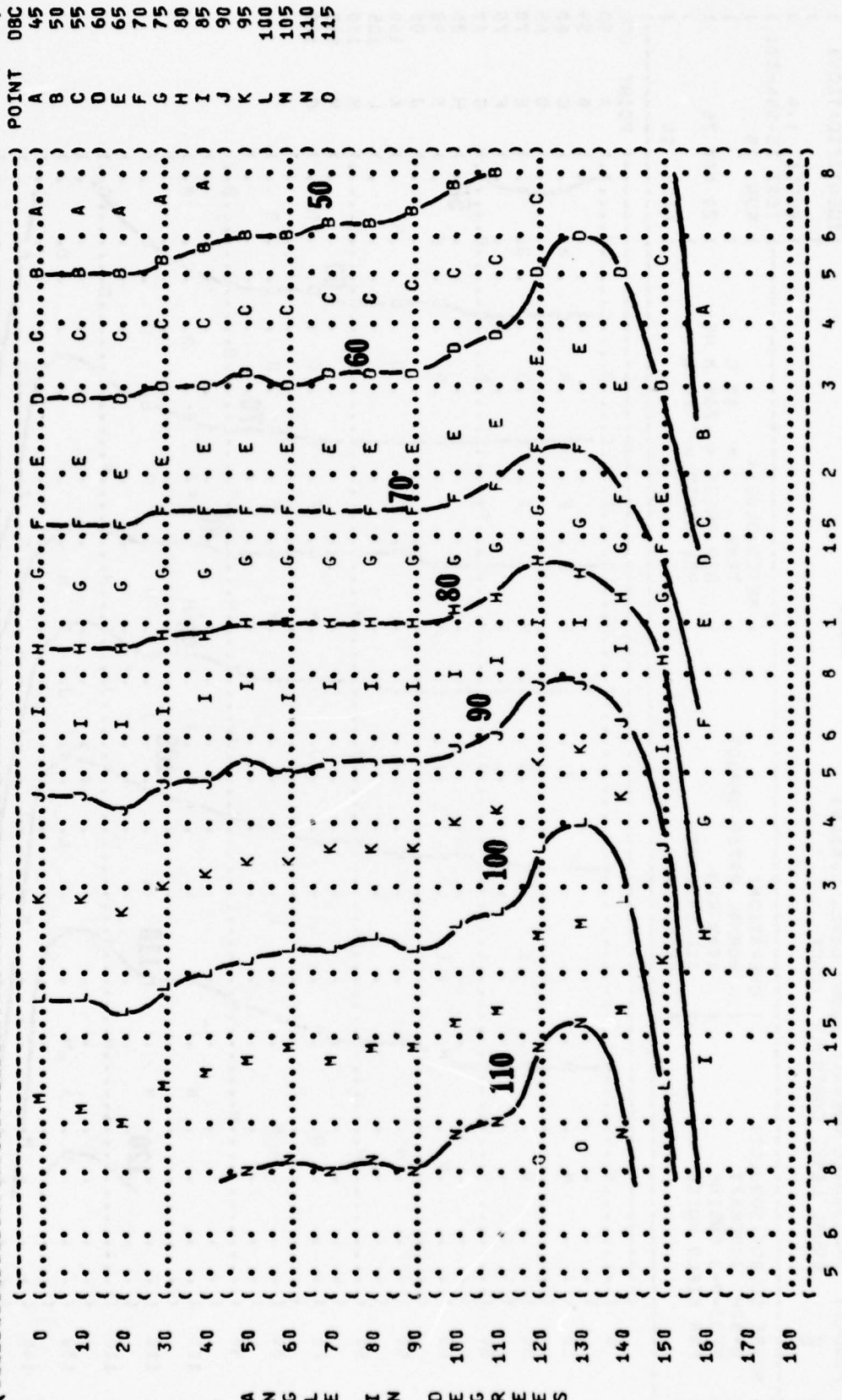
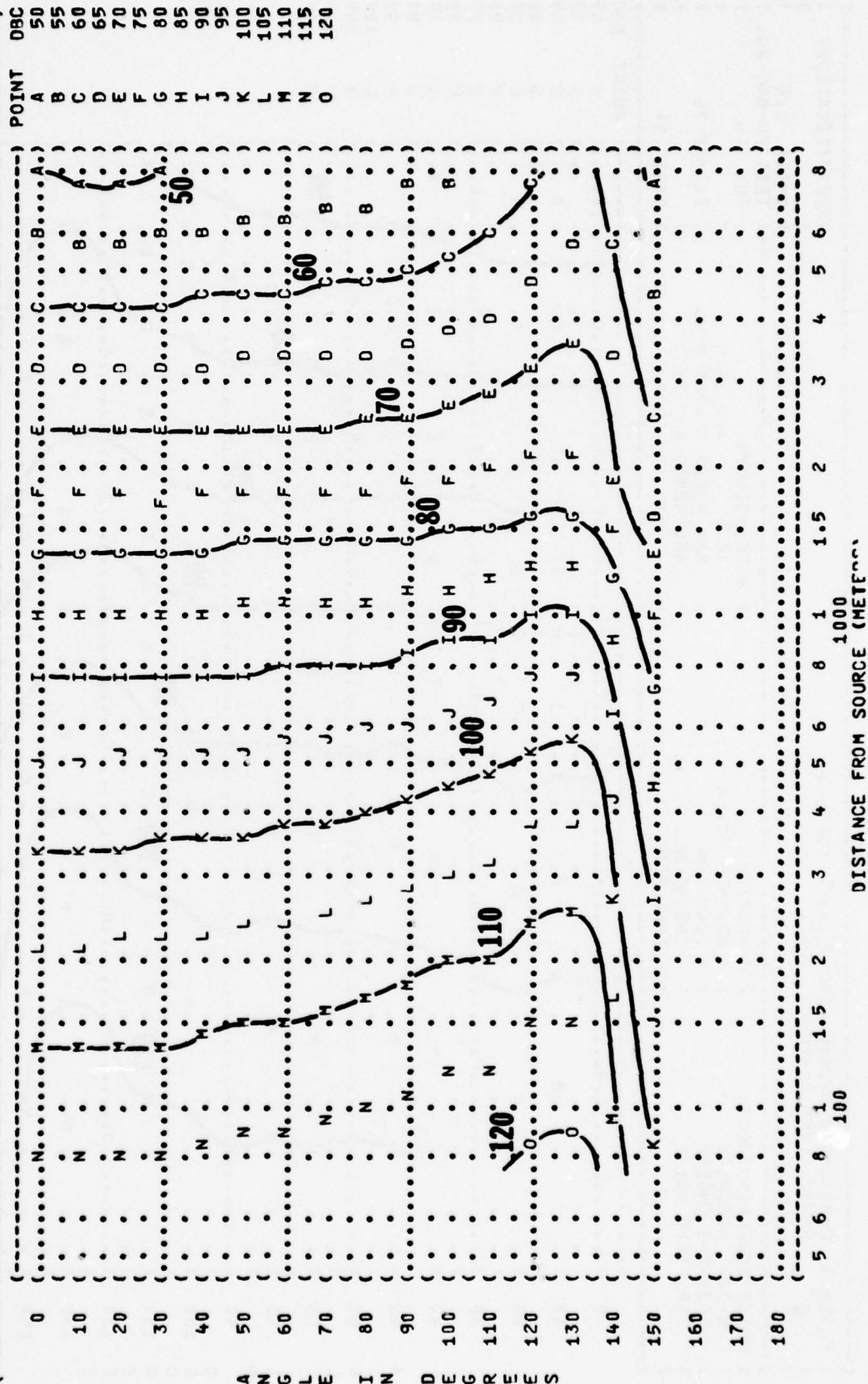


FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
 6
 IDENTIFICATION:
 OMEGA 1.4
 TEST 75-044-001
 RUN 04
 METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %
 NOISE SOURCE/SUBJECT:
 (OPERATION:
 (MAXIMUM POWER
 (8-52H AIRCRAFT
 (104% RPM
 (TF33-P-3 ENGINE
 (ENGINE NO. 4
 (FAR FIELD NOISE
 (FREE FLOW
 PAGE 14



DISTANCE FROM SOURCE (METERS)

(FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
 (EQUAL LEVEL CONTOURS (DBC)
 (6
 (IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-044-001
 () RUN 05
 (NOISE SOURCE/SUBJECT:
 (B-52H AIRCRAFT
 (TF33-P-3 ENGINE
 (FAR FIELD NOISE
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () OPERATION:
 () NORMAL RATED THRUST
 () 100% RPM
 () ALL ENGINES
 () FREE FLOW
 () PAGE 14




```
(-----)
( FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) )
( 7 EQUAL LEVEL CONTOURS (DBA) )
( )
(-----)
( NOISE SOURCE/SUBJECT: )
( B-52H AIRCRAFT )
( TF33-P-3 ENGINE )
( FAR FIELD NOISE )
( )
( OPERATION: )
( IDLE )
( 60% RPM )
( ALL ENGINES )
( FREE FLOW )
( )
( METEOROLOGY: )
( TEMP = 15 C )
( BAR PRESS = .760 M HG )
( REL HUMID = 70 % )
( )
( OMEGA 1.4 )
( TEST 75-044-001 )
( RUN 01 )
( )
( IDENTIFICATION: )
( )
( PAGE 15 )
(-----)
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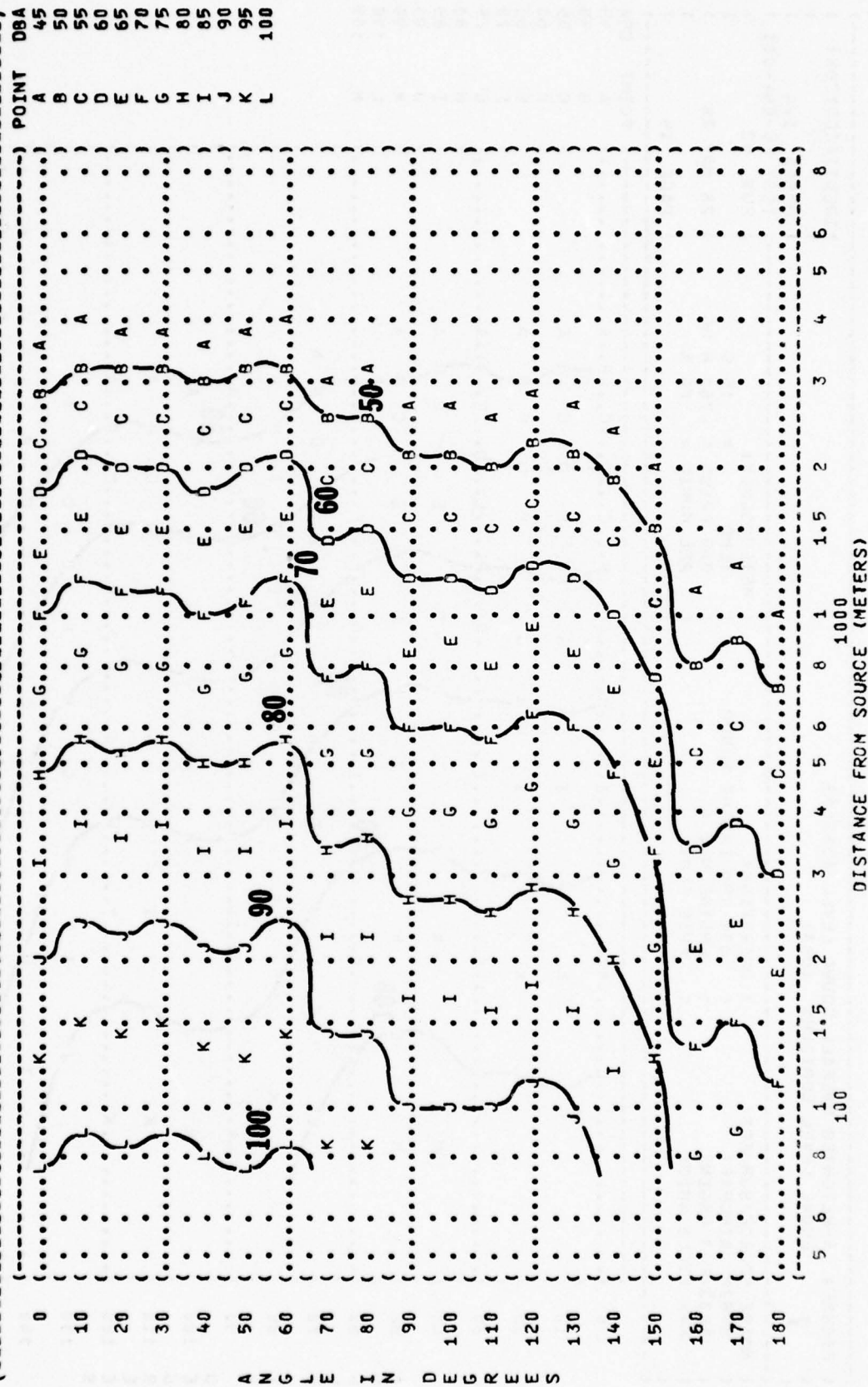


FIGURE 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 EQUAL LEVEL CONTOURS (DBA)

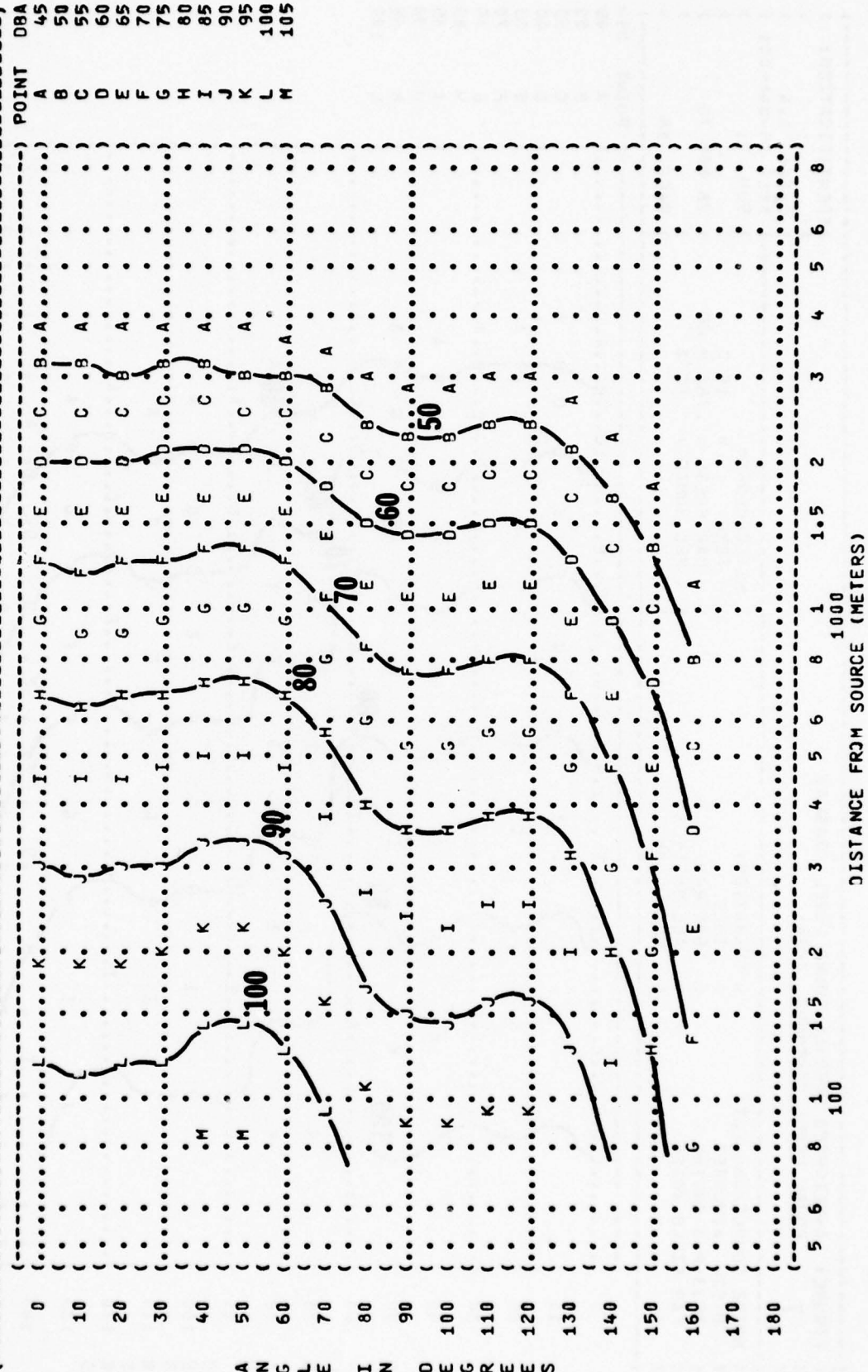
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 OMEGA 1.4
 TEST 75-044-001
 RUN 02

NOISE SOURCE/SUBJECT:
 B-52H AIRCRAFT
 TF33-P-3 ENGINE
 FAR FIELD NOISE

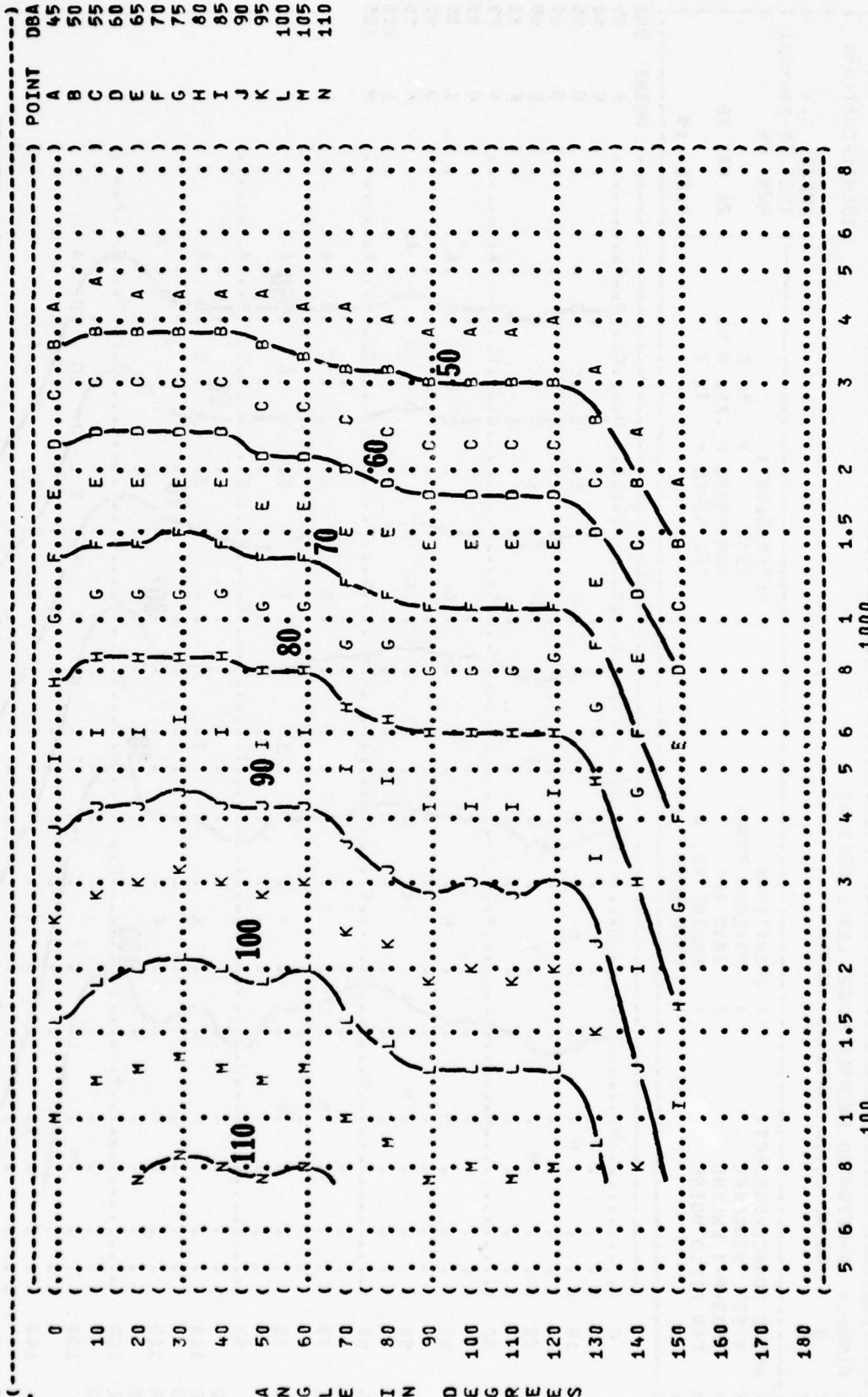
OPERATION:
 80% RPM ENGINE RUNUP
 ENGINE NO. 4
 FREE FLOW

METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %

28 MAY 76
 PAGE 15



```
(-----)
( FIGURE: A-WEIGHTED OVERALL SOUND LEVEL {OASLA} ) IDENTIFICATION: )
(      7    EQUAL LEVEL CONTOURS  (DBA) ) )
(-----)
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
(   9-52H AIRCRAFT ) TEMP = 15 C )
( TF33-P-3 ENGINE ) ENGINE NO. 4 BAR PRESS = .760 M HG )
( FAR FIELD NOISE ) FREE FLOW REL HUMID = 70 % )
(-----)
( RUN 03 )
( TEST 75-044-001 )
( PAGE 15 )
```



DISTANCE FROM SOURCE (METERS)

(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA))
 (7 EQUAL LEVEL CONTOURS (DBA))
 () IDENTIFICATION:)
 () OMEGA 1.4)
 (TEST 75-044-001)
 () RUN 05)
 () METEOROLOGY:)
 () TEMP = 15 C)
 () BAR PRESS = .760 M HG)
 () REL HUMID = 70 %)
 () 28 MAY 76)
 () PAGE 15)

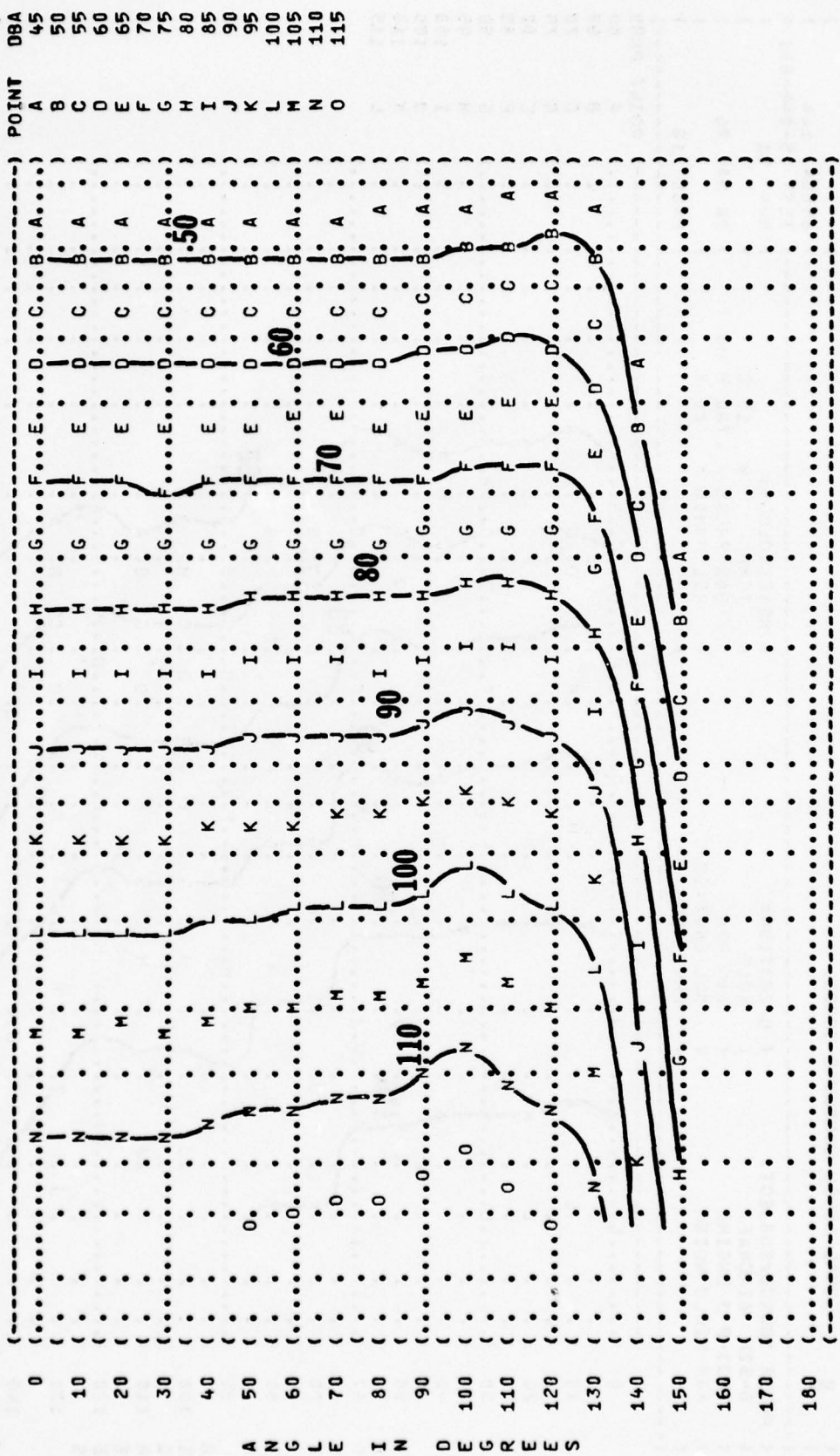
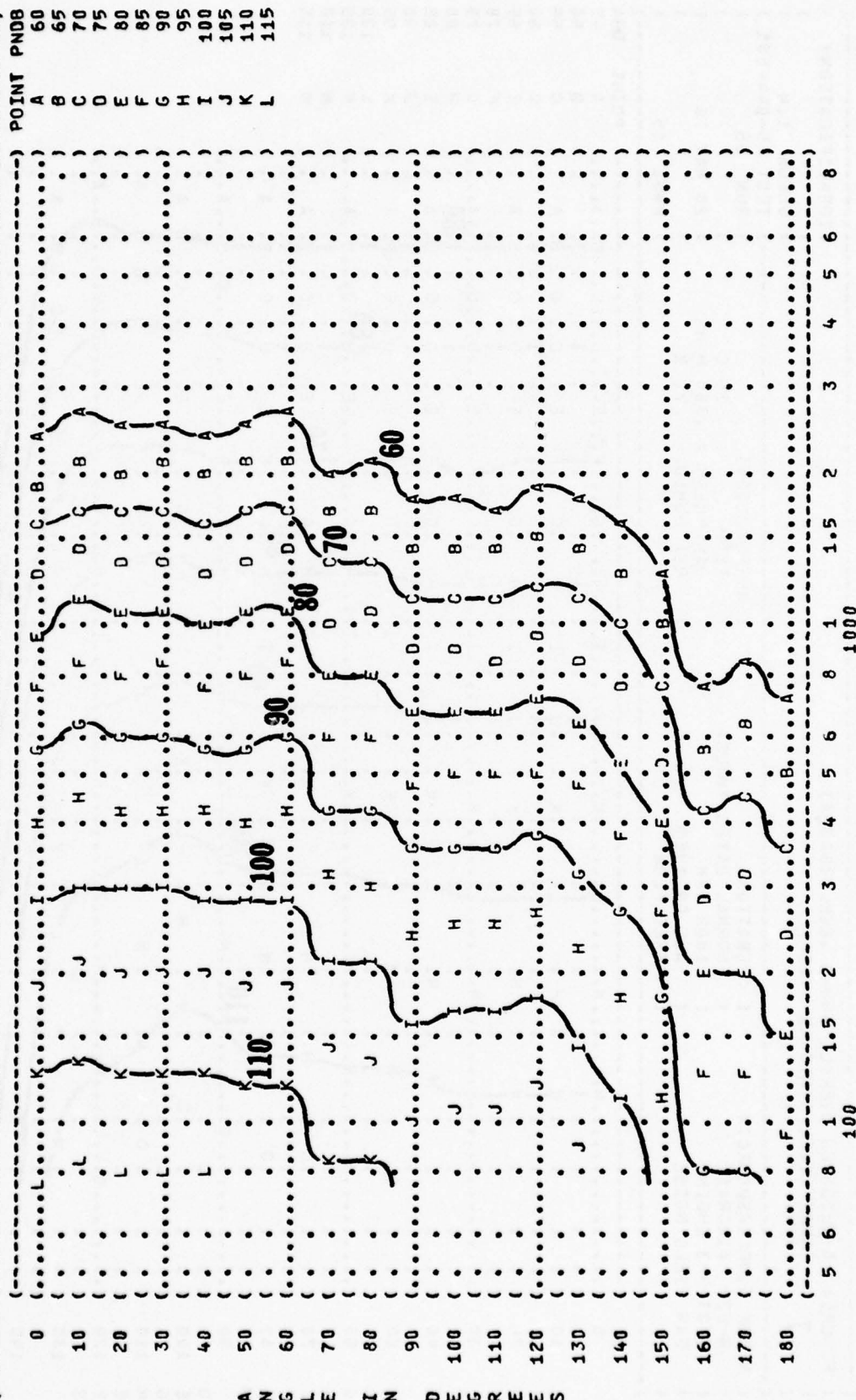


FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION {PNLT}
 8
 IDENTIFICATION:
 OMEGA 1.4
 TEST 75-044-001
 RUN 01
 28 MAY 76
 PAGE 16

NOISE SOURCE/SUBJECT:
 B-52H AIRCRAFT
 TF33-P-3 ENGINE
 FAR FIELD NOISE

OPERATION:
 IDLE
 60% RPM
 ALL ENGINES
 FREE FLOW

METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %



(FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION {PNLT}
 (8
 (EQUAL LEVEL CONTOURS (PNDB)
 () IDENTIFICATION:
 ()
 () OMEGA 1.4
 () TEST 75-044-001
 () RUN 02
 ()
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:
 (B-52H AIRCRAFT) TEMP = 15 C
 (TF33-P-3 ENGINE) ENGINE NO. 4 BAR PRESS = .760 M HG
 (FAR FIELD NOISE) FREE FLOW REL HUMID = 70 %
 ()
 () PAGE 16
 ()

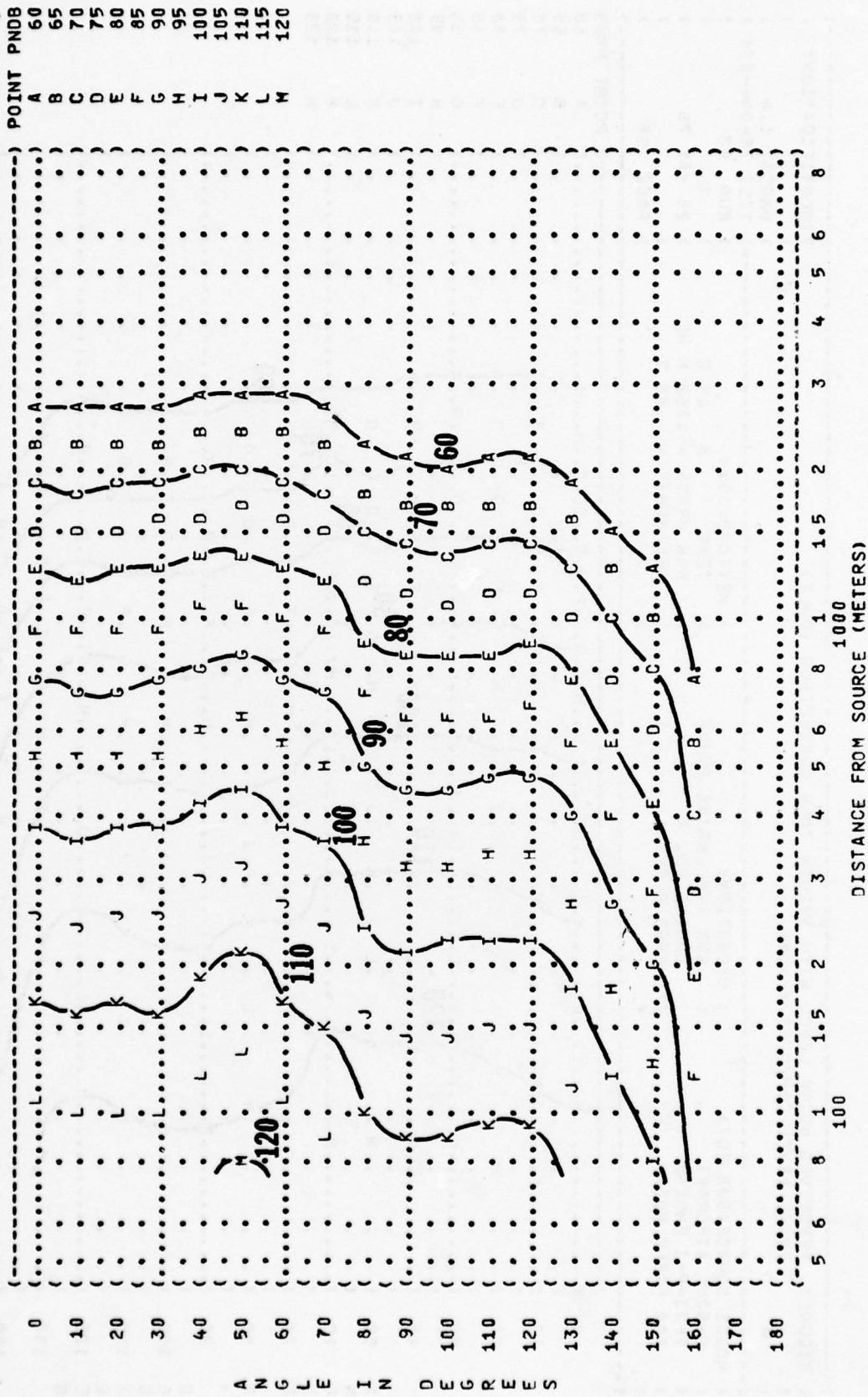


FIGURE 1 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
 8
 IDENTIFICATION:
 OMEGA 1.4
 TEST 75-044-001
 RUN 03
 METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %
 NOISE SOURCE/SUBJECT:
 OPERATION:
 95% RPM ENGINE RUNUP
 ENGINE NO. 4
 FREE FLOW
 NOISE SOURCE/SUBJECT:
 B-52H AIRCRAFT
 TF33-P-3 ENGINE
 FAR FIELD NOISE
 PAGE 16

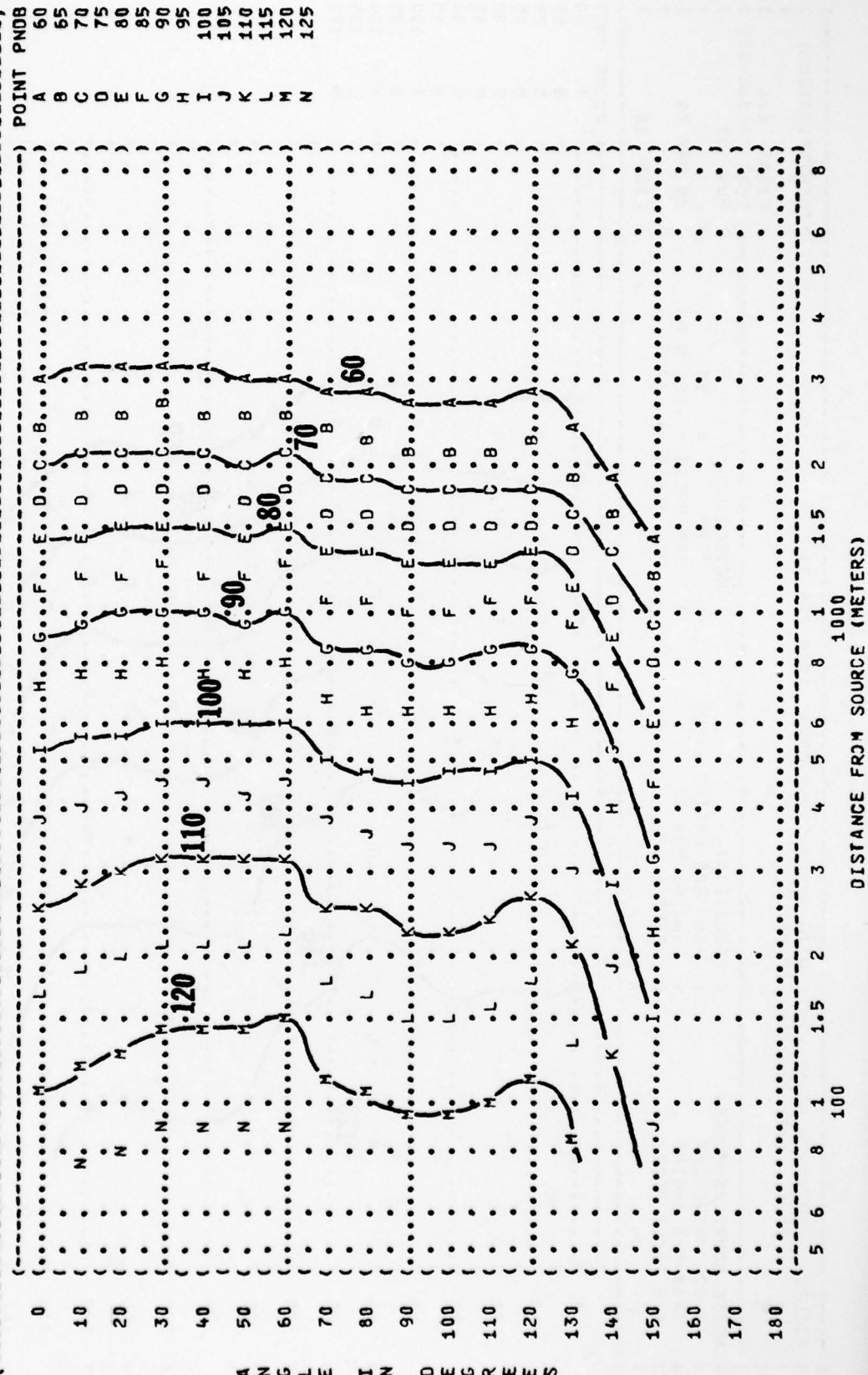
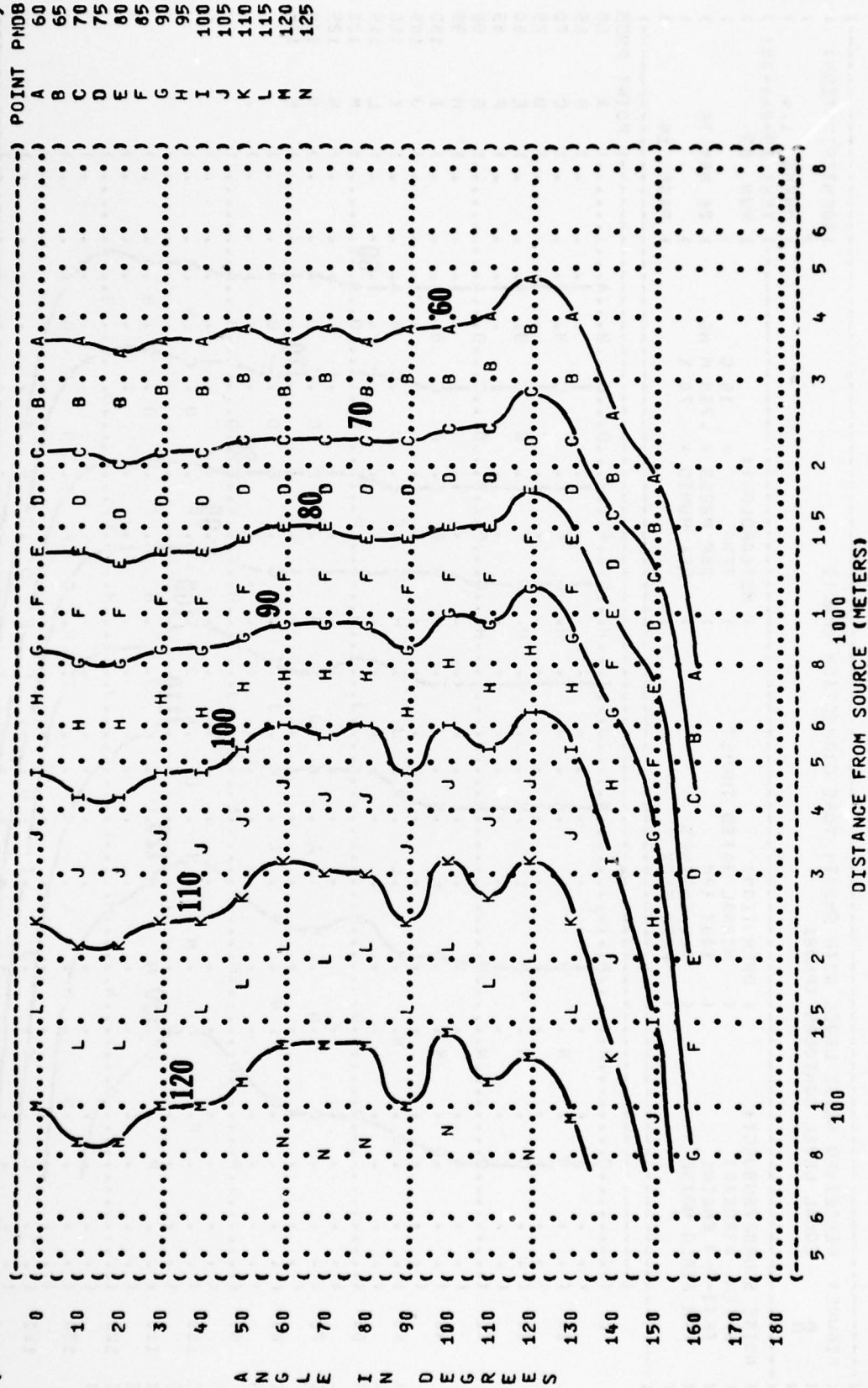


FIGURE 1 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
 8
 NOISE SOURCE/SUBJECT: () IDENTIFICATION: ()
 () 8-52H AIRCRAFT () OMEGA 1.4
 () TF33-P-3 ENGINE () TEST 75-044-001
 () FAR FIELD NOISE () RUN 04
 () () 11 NOV 75
 () () PAGE 16




```
(-----)
( FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION {PNLT} ) IDENTIFICATION:
(      8      EQUAL LEVEL CONTOURS (PNDB) ) )
( ) )
( ) OMEGA 1.4 )
( ) TEST 75-044-001 )
( ) RUN 05 )
( ) )
( ) METEOROLOGY: )
( B-52H AIRCRAFT ) TEMP = 15 C )
( TF33-P-3 ENGINE ) BAR PRESS = .760 M HG )
( FAR FIELD NOISE ) ALL ENGINES ) REL HUMID = 70 % )
( ) FREE FLOW ) )
( ) )
(-----)
```

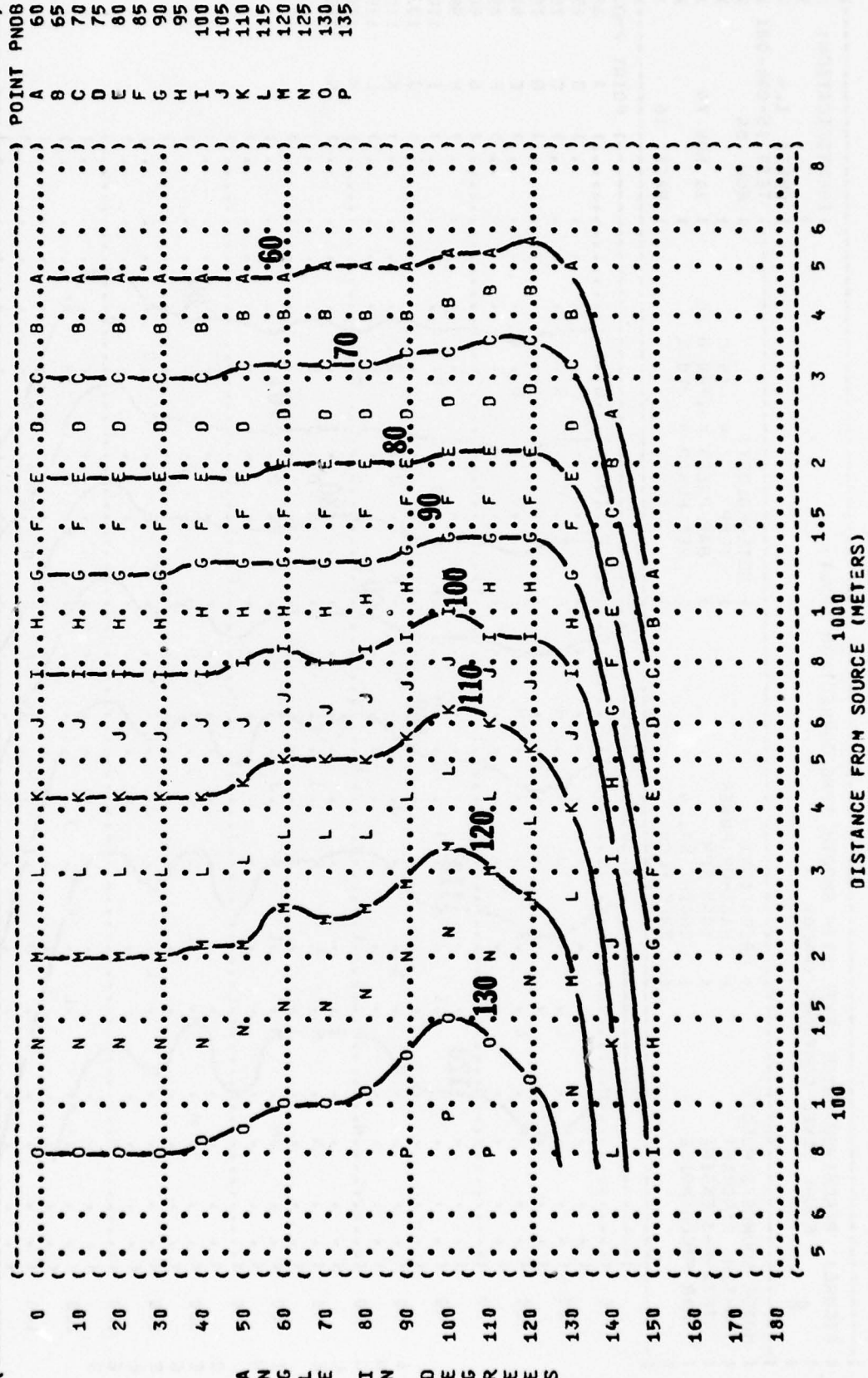
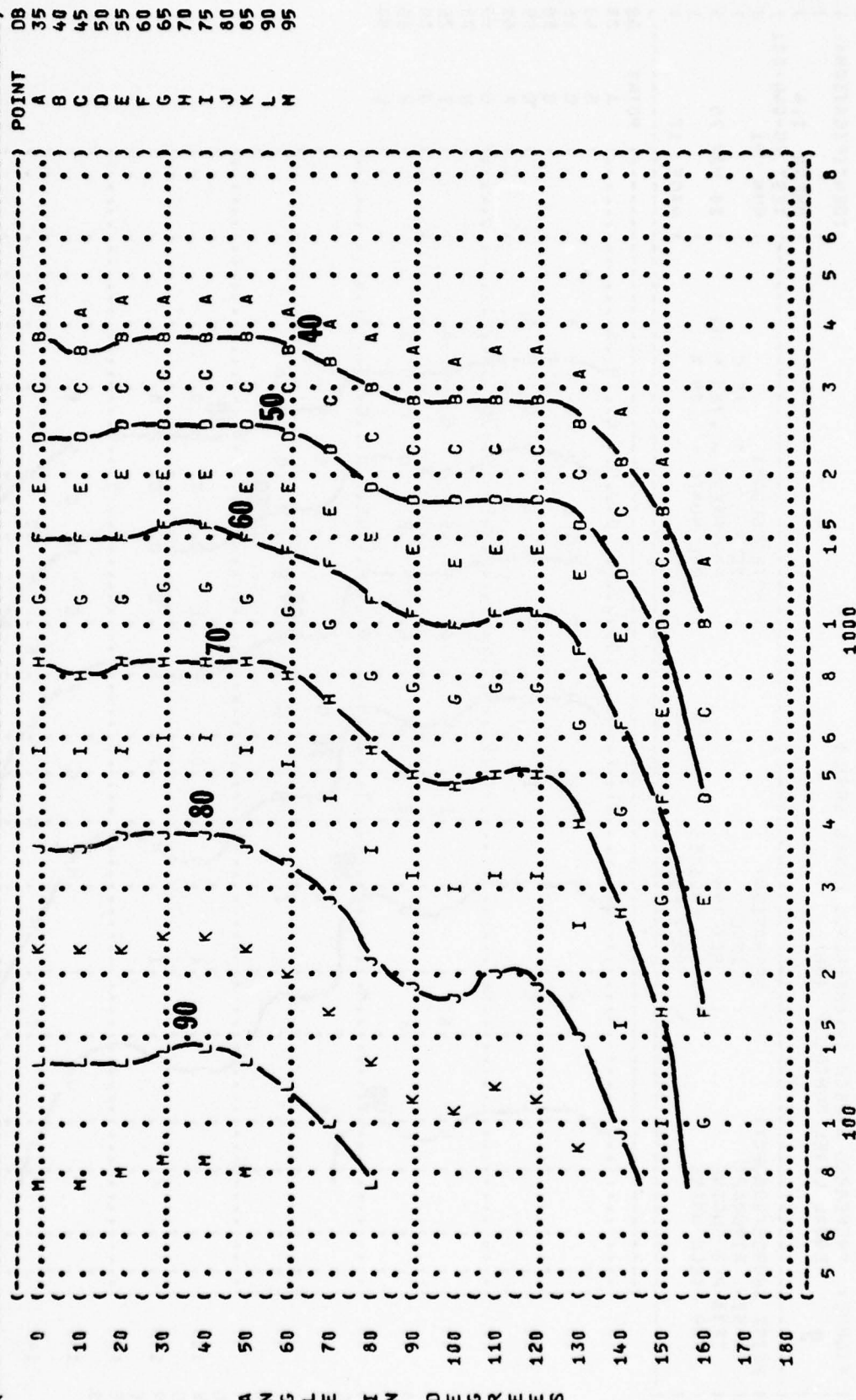


FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
 9
 IDENTIFICATION:
 OMEGA 1.4
 TEST 75-044-001
 RUN 02
 28 MAY 76
 PAGE 17

NOISE SOURCE/SUBJECT:
 B-52H AIRCRAFT
 TF33-P-3 ENGINE
 FAR FIELD NOISE

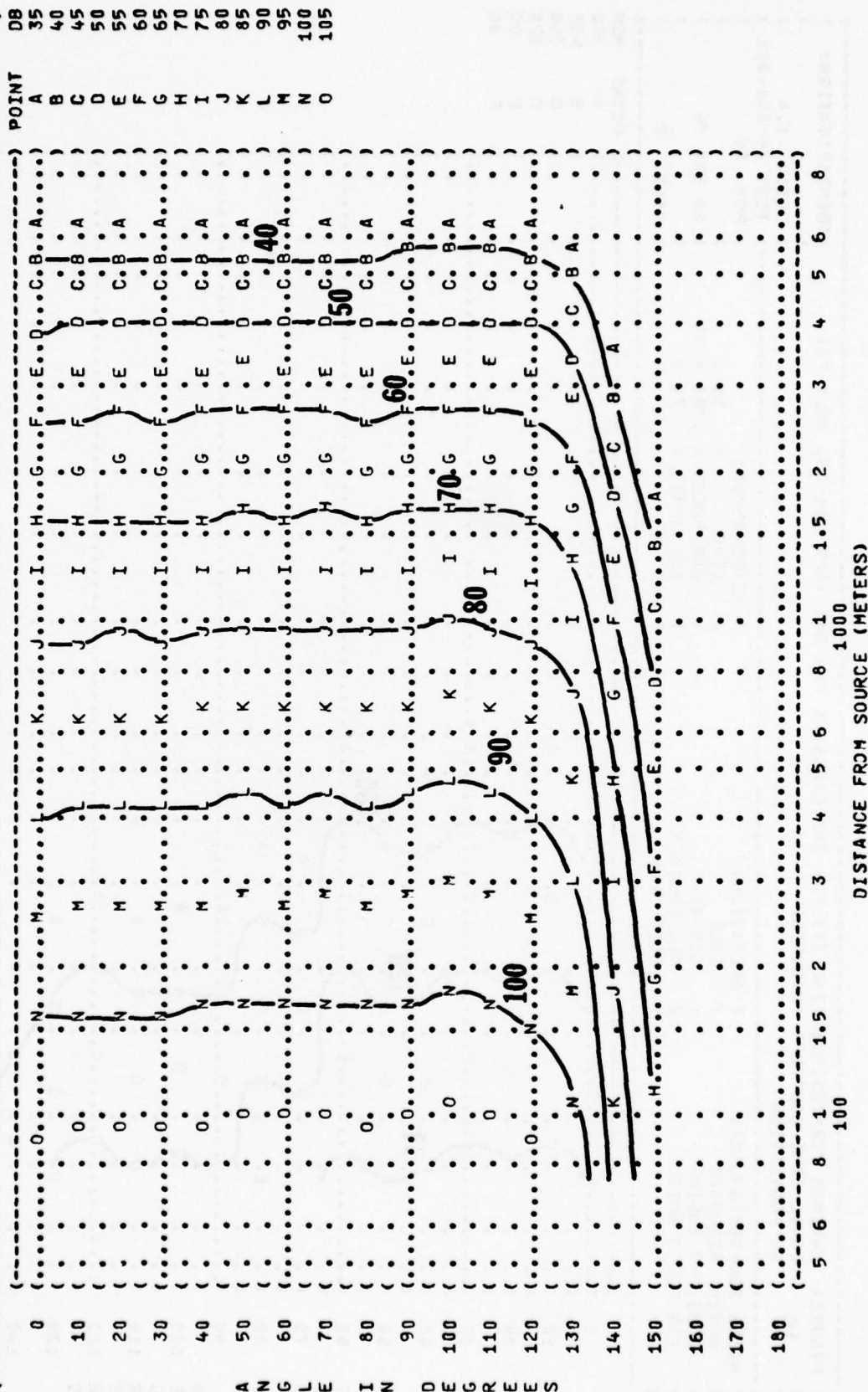
OPERATION:
 80% RPM ENGINE RUNUP
 ENGINE NO. 4
 FREE FLOW

METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %



PREFERRED SPEECH INTERFERENCE LEVEL {PSIL}
EQUAL LEVEL CONTOURS (DB)

(FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
 (9 EQUAL LEVEL CONTOURS (DB)
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 05
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:
 (B-52H AIRCRAFT) TEMP = 15 C
 (TF33-P-3 ENGINE) BAR PRESS = .760 M HG
 (FAR FIELD NOISE) REL HUMID = 70 %
 ())
 () PAGE 17




```
(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION:
( EQUAL TIME CONTOURS (MINUTES) ) )
( 10 ) OMEGA 1.4
( ) TEST 75-044-001
( NOISE SOURCE/SUBJECT: ) METEOROLOGY:
( B-52H AIRCRAFT ) IDLE ) TEMP = 15 C
( TF33-P-3 ENGINE ) 60% RPM ) BAR PRESS = .760 M HG
( FAR FIELD NOISE ) ALL ENGINES ) REL HUMID = 70 %
( FREE FLOW )
(-----)
( PAGE 8 )
```

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

MINIMUM QPL EAR MUFFS
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS
COMFIT TRIPLE FLANGE EAR PLUGS
H-133 GROUND COMMUNICATION UNIT

DISTANCE FROM SOURCE (METERS)


```
(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( EQUAL TIME CONTOURS (MINUTES) ) )
( COMFIT TRIPLE FLANGE EAR PLUGS ) )
( ) OMEGA 1.4 )
( ) TEST 75-044-001 )
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) RUN 02 )
( B-52H AIRCRAFT ) TEMP = 15 C ) )
( TF33-P-3 ENGINE ) ENGINE NO. 4 ) BAR PRESS = .760 M HG )
( FAR FIELD NOISE ) FREE FLOW ) REL HUMID = 70 % )
( ) ) ) PAGE 8 )
(-----)
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DISTANCE FROM SOURCE (METERS)

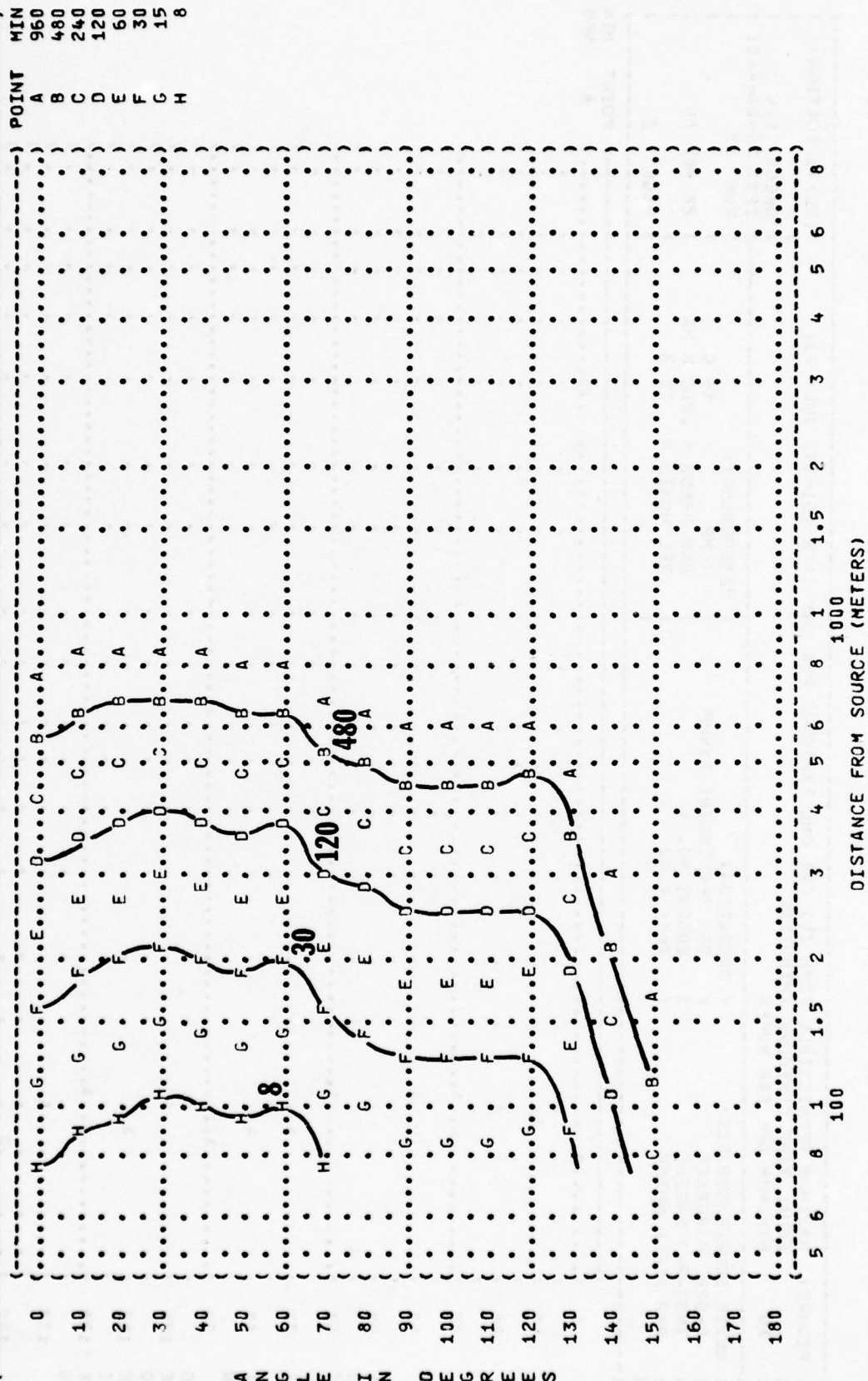
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(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION:
(      EQUAL TIME CONTOURS (MINUTES) ) )
(      10 ) OMEGA 1.4
(-----)
( NOISE SOURCE/SUBJECT: ) METEOROLOGY:
( B-52H AIRCRAFT ) TEMP = 15 C
( TF33-P-3 ENGINE ) ENGINE NO. 4 BAR PRESS = .760 M HG
( FAR FIELD NOISE ) FREE FLOW REL HUMID = 70 %
( ) ) PAGE 9
(-----)
```

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

MINIMUM QPL EAR MUFFS
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS
H-133 GROUND COMMUNICATION UNIT

DISTANCE FROM SOURCE (METERS)

```
(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME {1} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( EQUAL TIME CONTOURS (MINUTES) ) )
( 10 NO PROTECTION ) OMEGA 1.4
( ) TEST 75-044-001
( ) RUN 03
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( B-52H AIRCRAFT ) TEMP = 15 C )
( TF33-P-3 ENGINE ) ENGINE NO. 4 ) BAR PRESS = .760 M HG )
( FAR FIELD NOISE ) FREE FLOW ) REL HUMID = 70 % )
( ) ) ) PAGE 7
(-----)
```



NOISE SOURCE/SUBJECT:	(	OPERATION:	)	METEOROLOGY:	)	RUN	03
B-52H AIRCRAFT	(	95% RPM ENGINE RJNUP	)	TEMP = 15 C)		
TF33-P-3 ENGINE	(	ENGINE NO. 4	)	BAR PRESS = .760 H HG	)	28	MAY 76
FAR FIELD NOISE	(	FREE FLOW	)	REL HUMID = 70 %)		
	(		)		)	PAGE	9

[illegible]

1000

RCE/SUBJECT:
AIRCRAFT
3 ENGINE
LD NOISE

(OPERATION:
(95% RPM ENGINE RUNUP
(ENGINE NO. 4
(FREE FLOW
()

) METEOROLOGY:
) TEMP = 15 C
) BAR PRESS = .760 H HG
) REL HUMID = 70 %
)

) RUN 03
)
) 28 MAY 76
)
) PAGE 10

DISTANCE FROM SOURCE (METERS)

10

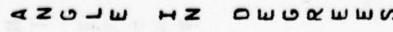


FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

IDENTIFICATION:

10

OMEGA 1.4

TEST 75-044-001

RUN 03

28 MAY 76

PAGE 12

NOISE SOURCE/SUBJECT:

OPERATIONS:

95% RPM ENGINE RUNUP

TEMP = 15 C

ENGINE NO. 4

BAR PRESS = .760 M HG

FREE FLOW

REL HUMID = 70 %

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY

AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS

FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)

UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

AMERICAN OPTICAL 1700 EAR MUFFS

5 6 8 1 1.5 2 3 4 5 6 8

100

DISTANCE FROM SOURCE (METERS)

FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

IDENTIFICATION:

10

NO PROTECTION

NOISE SOURCE/SUBJECT:

B-52H AIRCRAFT

TF33-P-3 ENGINE

FAR FIELD NOISE

OPERATION:

MAXIMUM POWER

104% RPM

ENGINE NO. 4

FREE FLOW

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

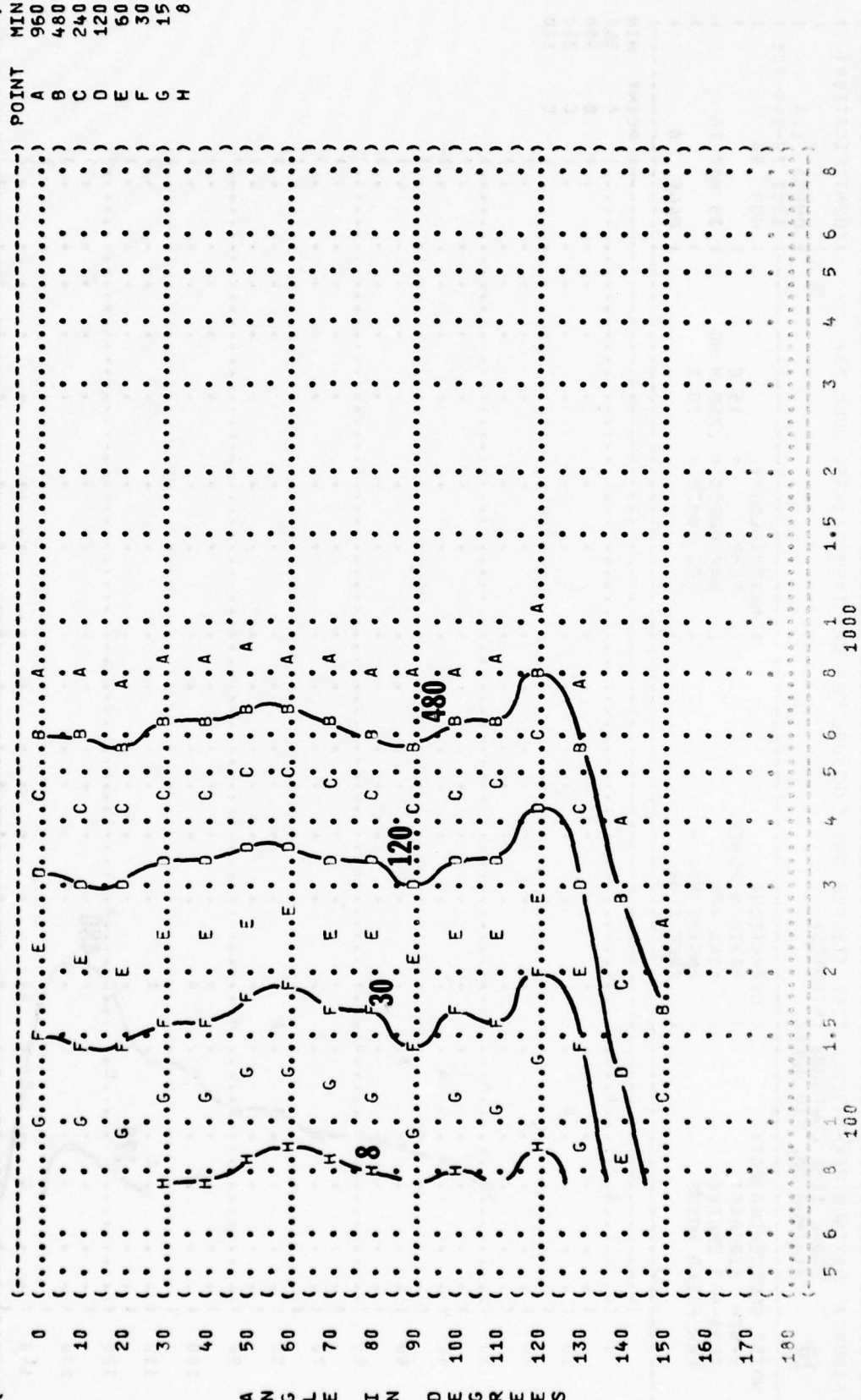
OMEGA 1.4

TEST 75-044-001

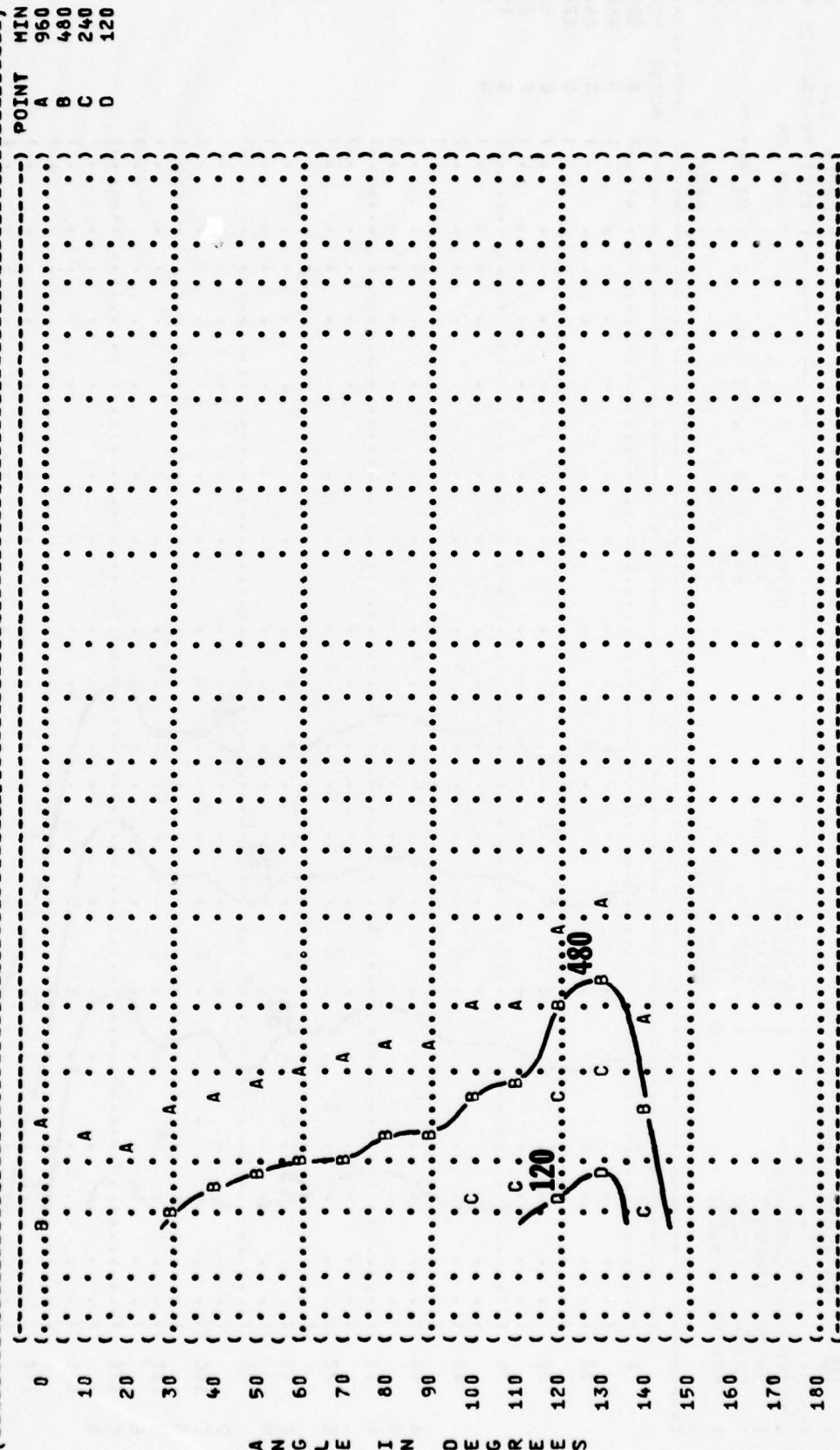
RUN 04

28 MAY 76

PAGE 7

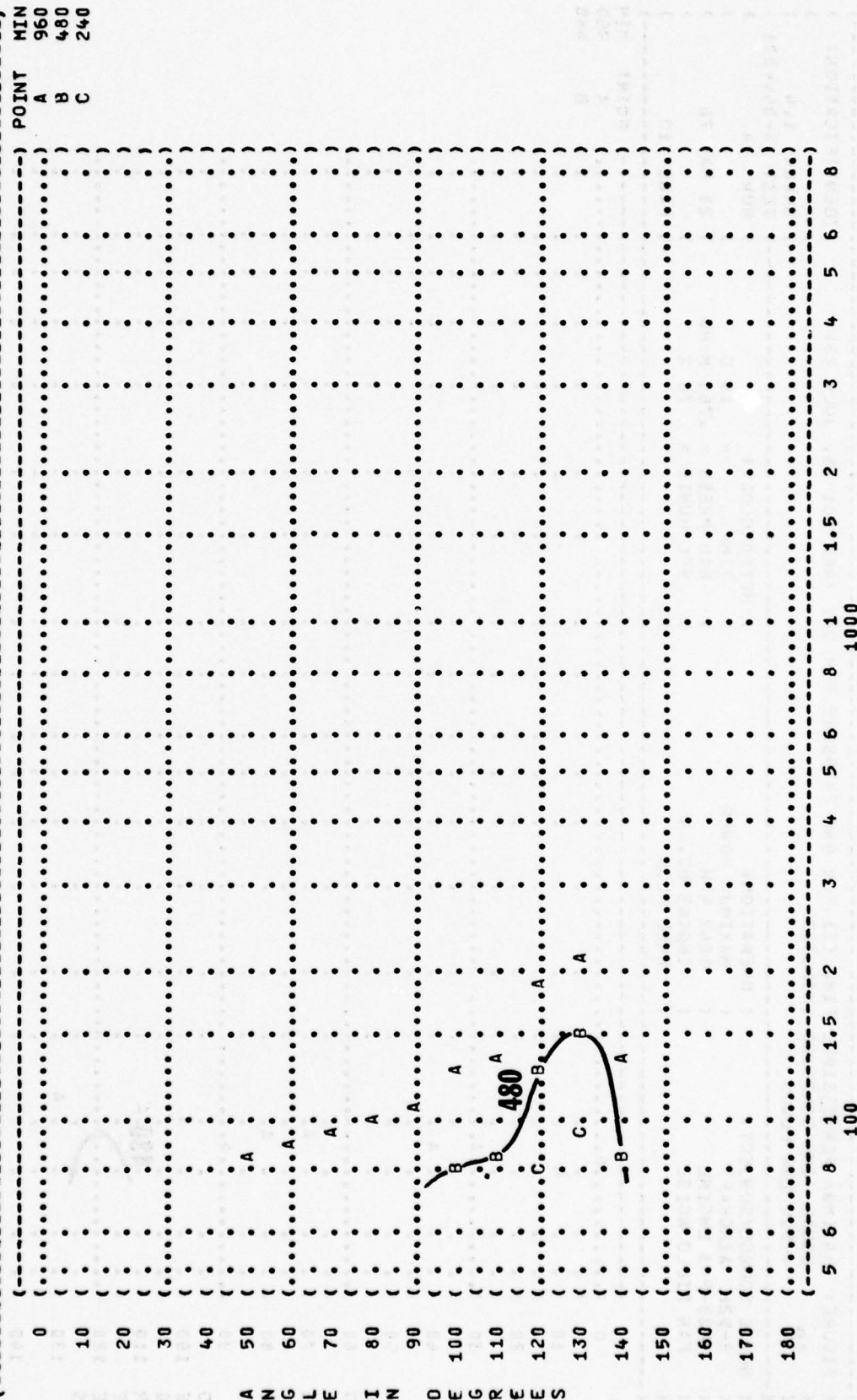


(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 (10 EQUAL TIME CONTOURS (MINUTES)))
 (MINIMUM QPL EAR MUFFS))
 () OMEGA 1.4)
 () TEST 75-044-001)
 () RUN 04)
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:)
 (B-52H AIRCRAFT) TEMP = 15 C)
 (TF33-P-3 ENGINE) 104% RPM) BAR PRESS = .760 M HG)
 (FAR FIELD NOISE) ENGINE NO. 4) REL HUMID = 70 %)
 () FREE FLOW))
 () PAGE 8)



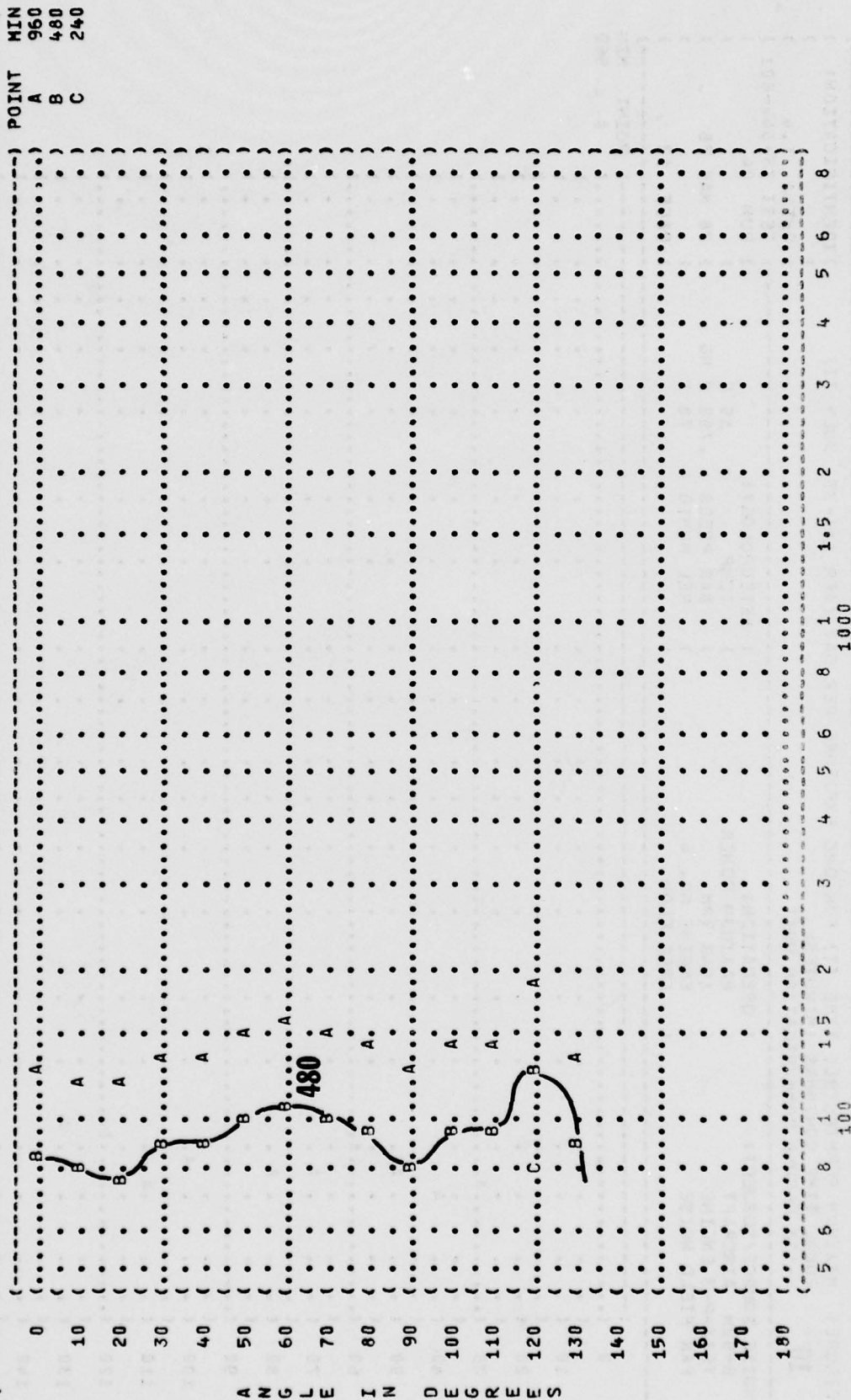
A N G L E I N D E G R E E S

FIGURE:	MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)	IDENTIFICATION:
10	EQUAL TIME CONTOURS (MINUTES)	
	AMERICAN OPTICAL 1700 EAR MUFFS	OMEGA 1.4
		TEST 75-044-001
	NOISE SOURCE/SUBJECT:	
	(B-52H AIRCRAFT	METEOROLOGY:
	(MAXIMUM POWER	TEMP = 15 C
	(104% RPM	BAR PRESS = .760 M HG
	(ENGINE NO. 4	REL HUMID = 70 %
	(FREE FLOW	PAGE 9

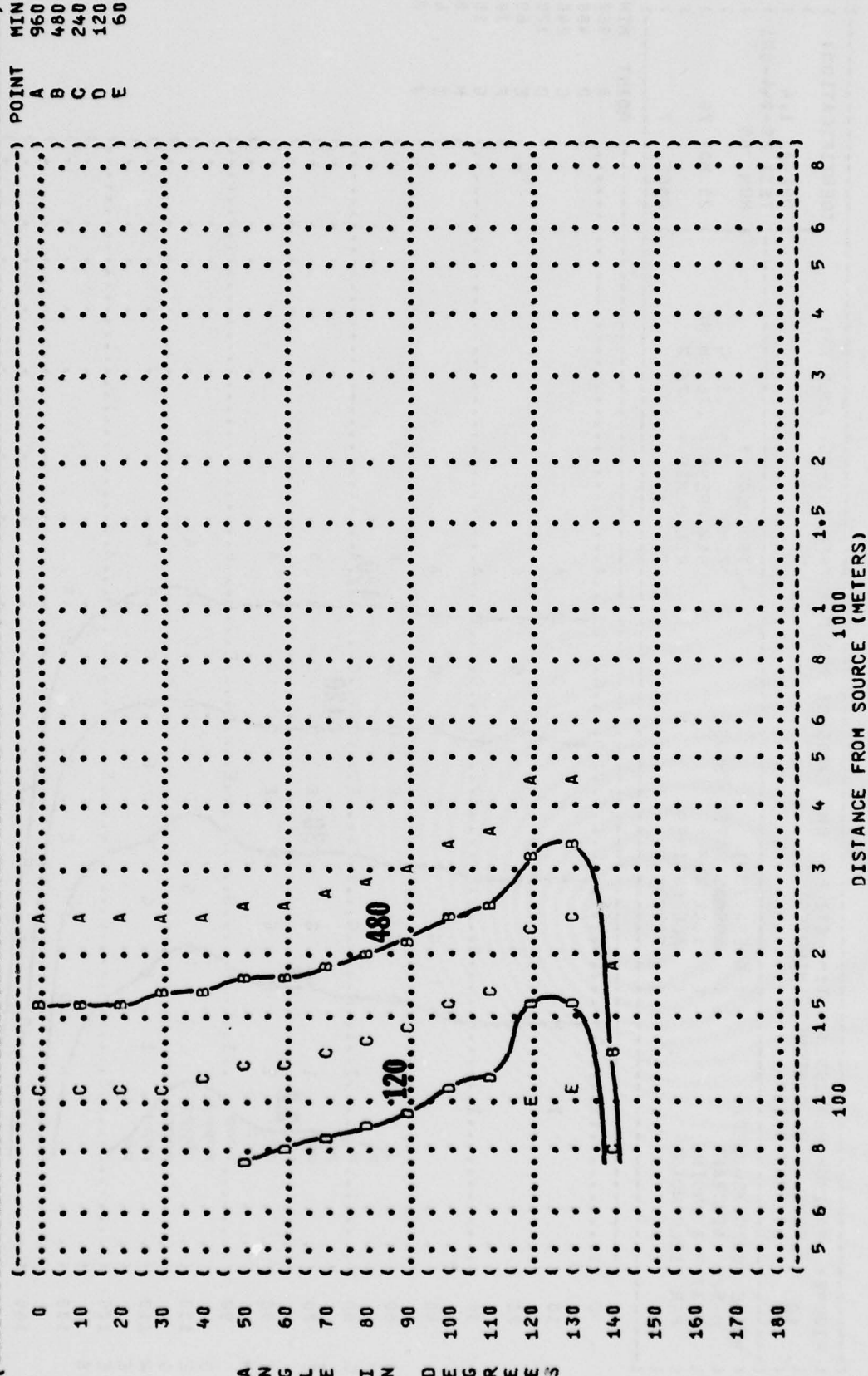


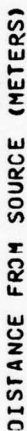
DISTANCE FROM SOURCE (METERS)


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(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION:
( EQUAL TIME CONTOURS (MINUTES) )
( COMFIT TRIPLE FLANGE EAR PLUGS ) OMEGA 1.4
( TEST 75-044-001 )
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: ) RUN 04
( B-52H AIRCRAFT ) MAXIMUM POWER ) TEMP = 15 C )
( TF33-P-3 ENGINE ) 104% RPM ) BAR PRESS = .760 M HG )
( FAR FIELD NOISE ) ENGINE NC. 4 ) REL HUMID = 70 % )
( FREE FLOW ) PAGE 11
(-----)
( MIN POINT
0 (.....A.....) A 960
(.....B.....) B 480
10 (.....C.....) C 240
```

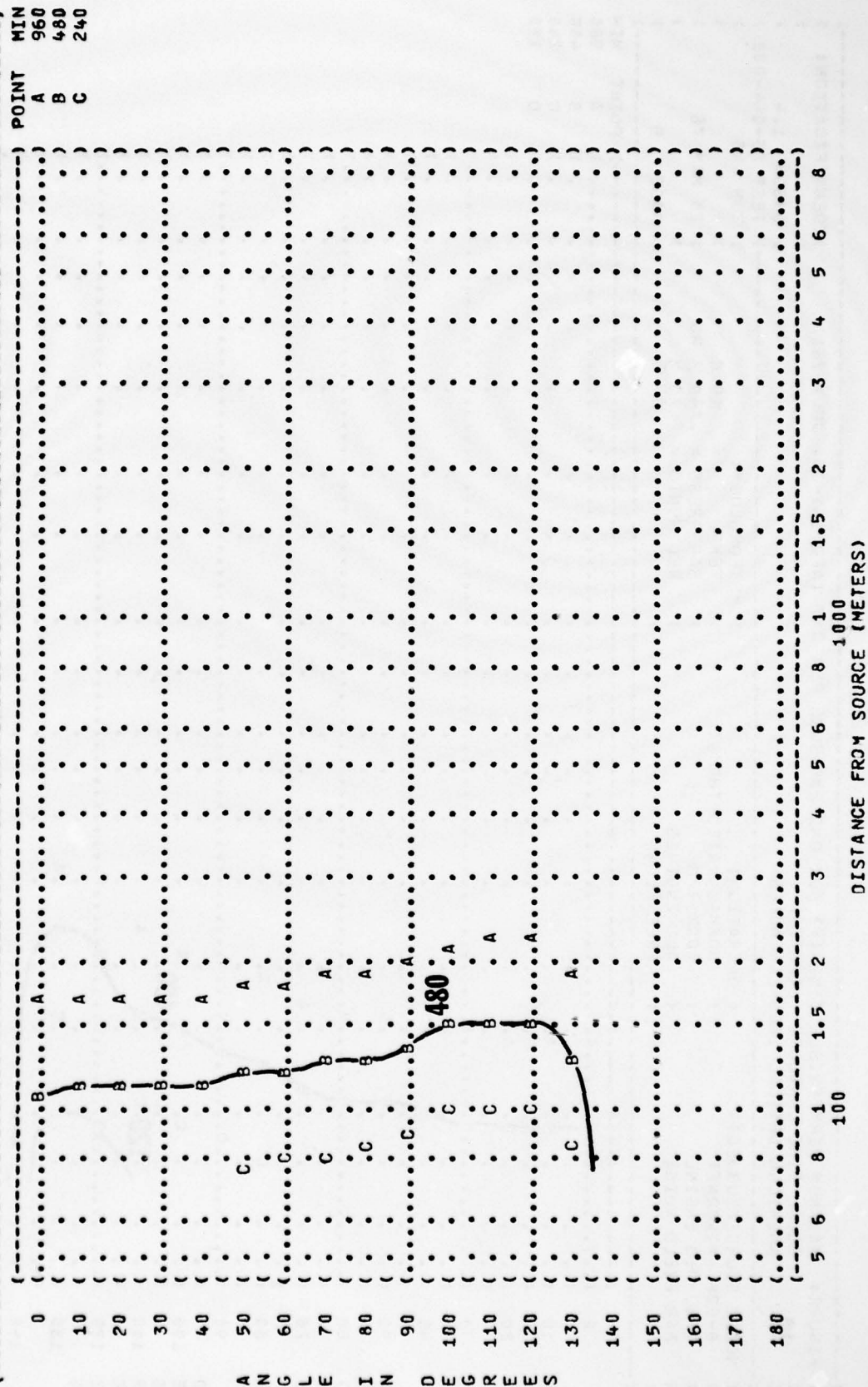



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(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( EQUAL TIME CONTOURS (MINUTES) ) )
( 10 MINIMUM QPL EAR MUFFS ) )
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( B-52H AIRCRAFT ) TEMP = 15 C )
( TF33-P-3 ENGINE ) 100% RPM BAR PRESS = .760 M HG )
( FAR FIELD NOISE ) ALL ENGINES REL HUMID = 70 % )
( FREE FLOW ) ) PAGE 8 )
(-----)
```



[illegible]

(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 (EQUAL TIME CONTOURS (MINUTES)))
 (**10** V-51R EAR PLUGS) OMEGA 1.4)
 () TEST 75-044-001)
 () RUN 05)
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:)
 (B-52H AIRCRAFT) TEMP = 15 C)
 (TF33-P-3 ENGINE) 100% RPM) BAR PRESS = .760 M HG)
 (FAR FIELD NOISE) ALL ENGINES) REL HUMID = 90 %)
 () FREE FLOW))
 () PAGE 10)



MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)	) IDENTIFICATION:
EQUAL TIME CONTOURS (MINUTES))
COMPT TRIPLE FLANGE EAR PLUGS	) OMEGA 1.4

WINE SOURCE/SUBJECT:

0-92H AIRCRAFT

70 33-0-3 ENGINE

FAR FIELD NOISE

(OPERATION:

(NORMAL RATED THRUST

(100% 2PM

(ALL ENGINES

FREE FLOW)

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

11
PAGE 11

AY (AFR 161-35, JULY 73)

IDENTIFICATION:

OMEGA 1.4

TEST 75-044-001

) RUN 05

()

28 MAY 76

) PAGE 11

	C	B	A	POINT	MIN
0	()	()	()	()	960 A
10	()	()	()	()	480 B
20	()	()	()	()	240 C
	()	()	()	()	120 D
	()	()	()	()	60 E

ANGIE IN DEGREWS

79

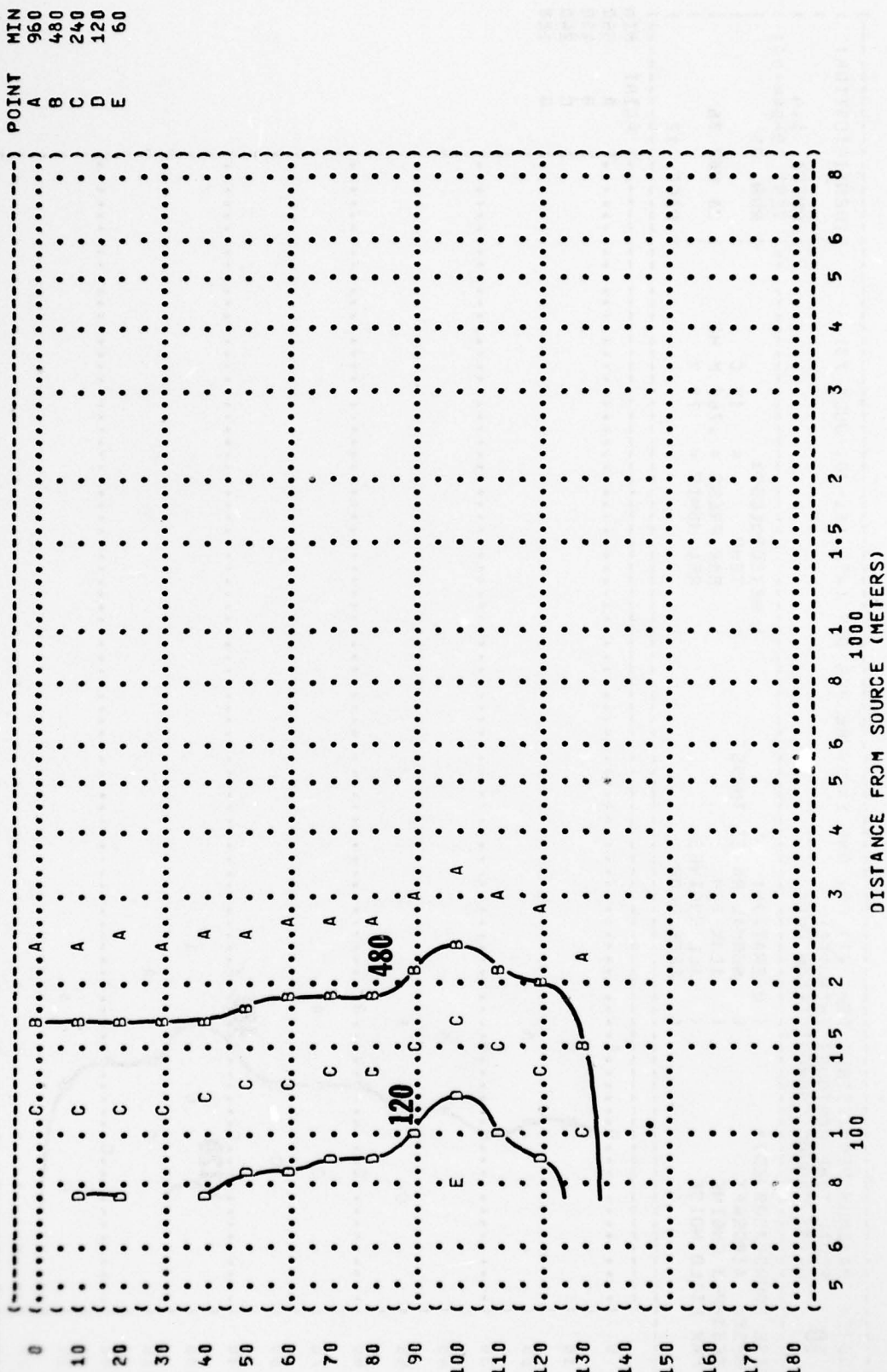
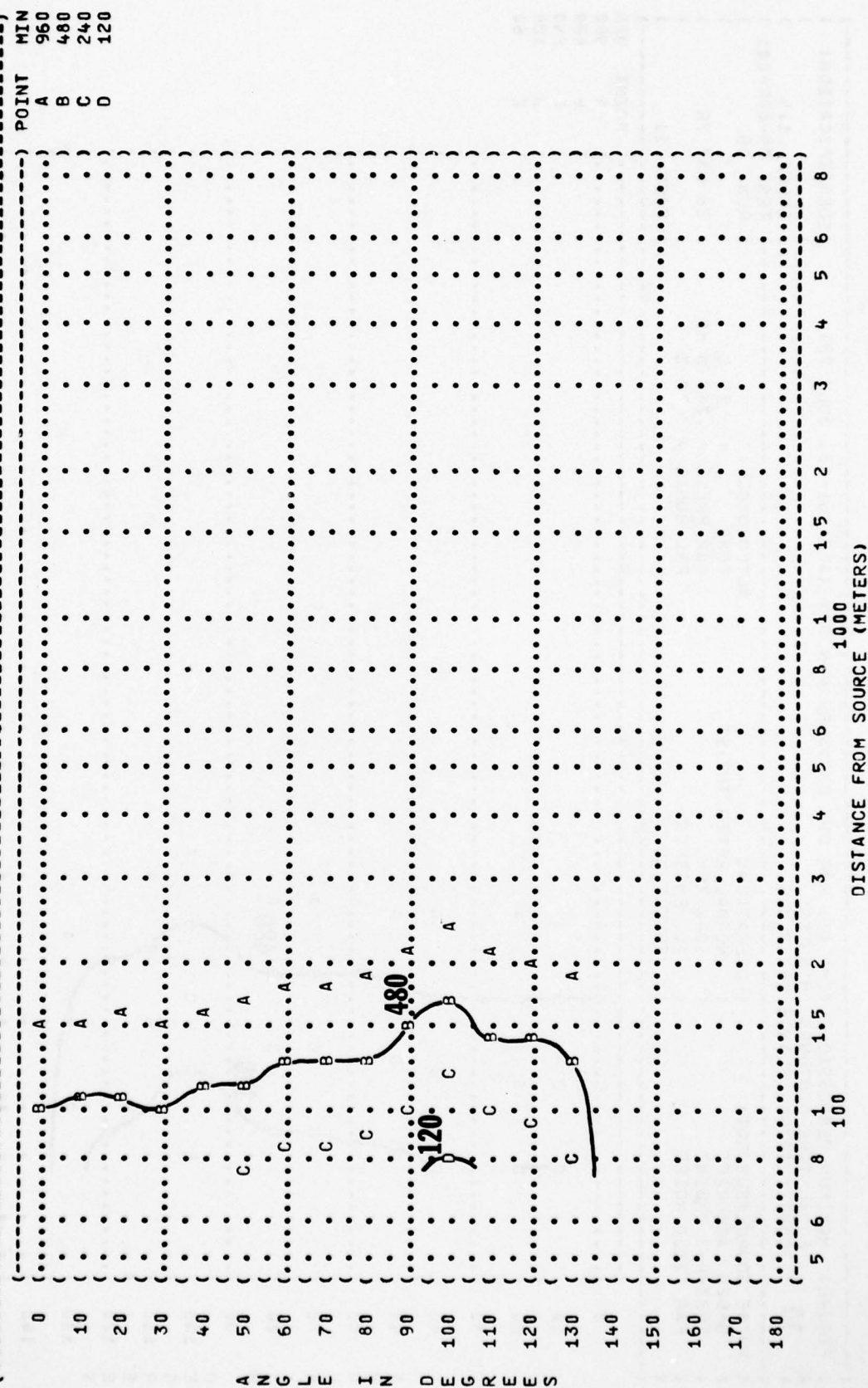


FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
 EQUAL TIME CONTOURS (MINUTES)
10
 H-133 GROUND COMMUNICATION UNIT

NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:)
 8-52H AIRCRAFT (NORMAL RATED THRUST) TEMP = 15 C)
 TF33-P-3 ENGINE (100% RPM) BAR PRESS = .760 M HG)
 FAR FIELD NOISE (ALL ENGINES) REL HUMID = 70 %)
 (FREE FLOW))

IDENTIFICATION:)
)
) OMEGA 1.4)
) TEST 75-044-001)
) RUN 05)
)
) 28 MAY 76)
)
) PAGE 12)



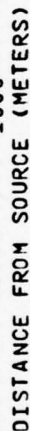
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B-52H AIRCRAFT
TF33-P-3 ENGINE
EAR FIELD NOISE

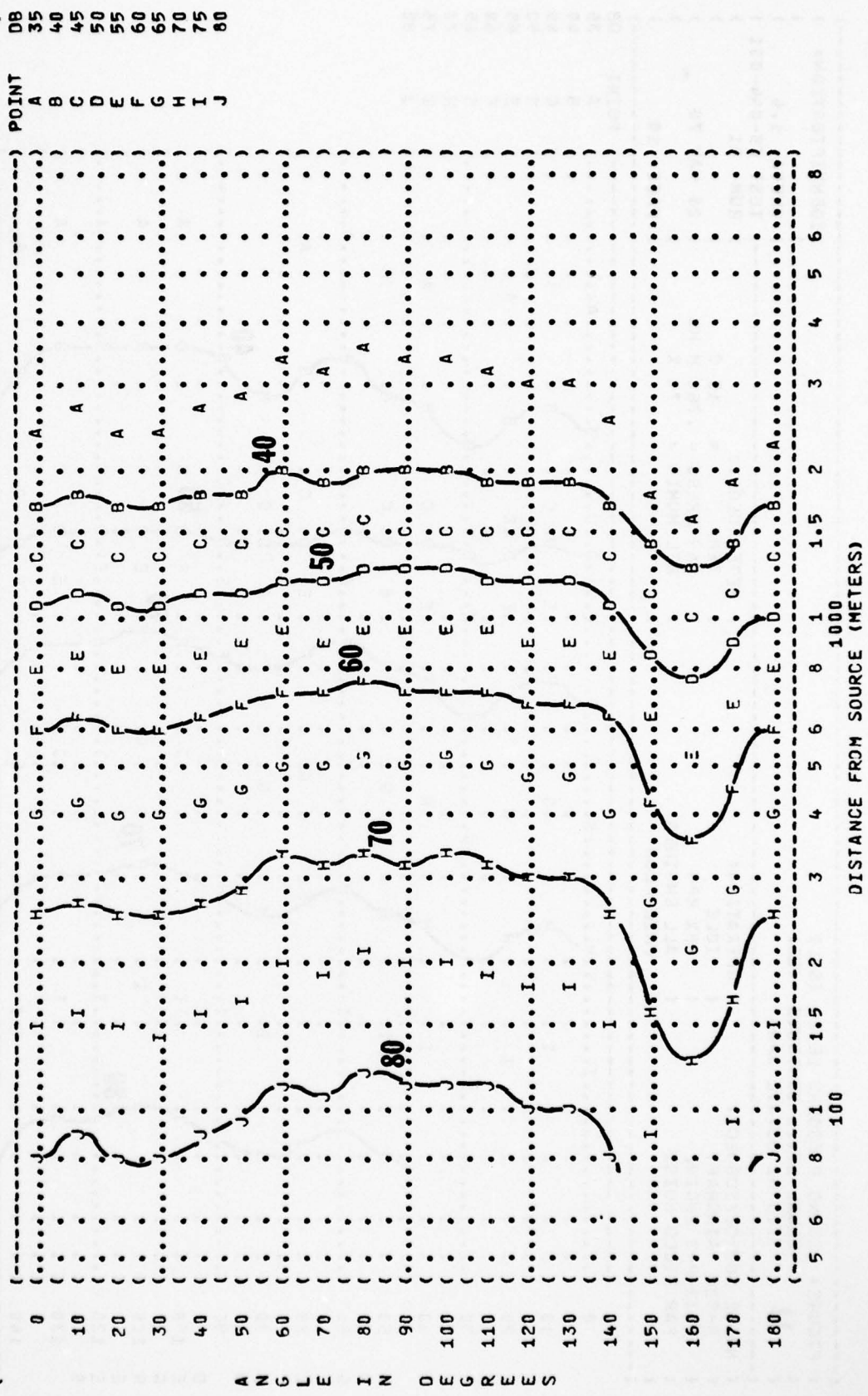
(IOLE
(60% RPM
(ALL ENG
(FREE FLO

TEMP
BAR PRESS
REL HUMID

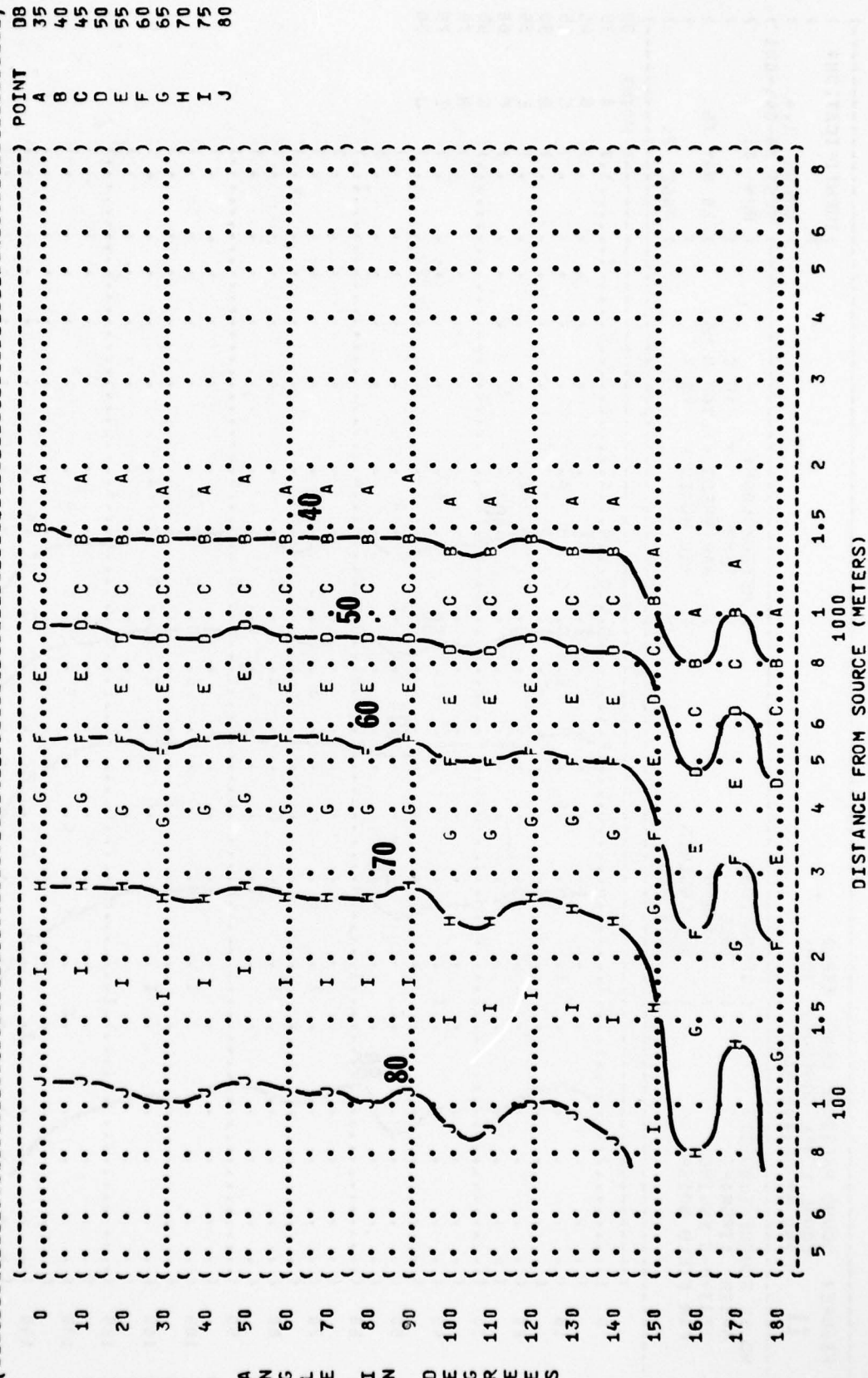
TEST 75-044-001
RUN 01



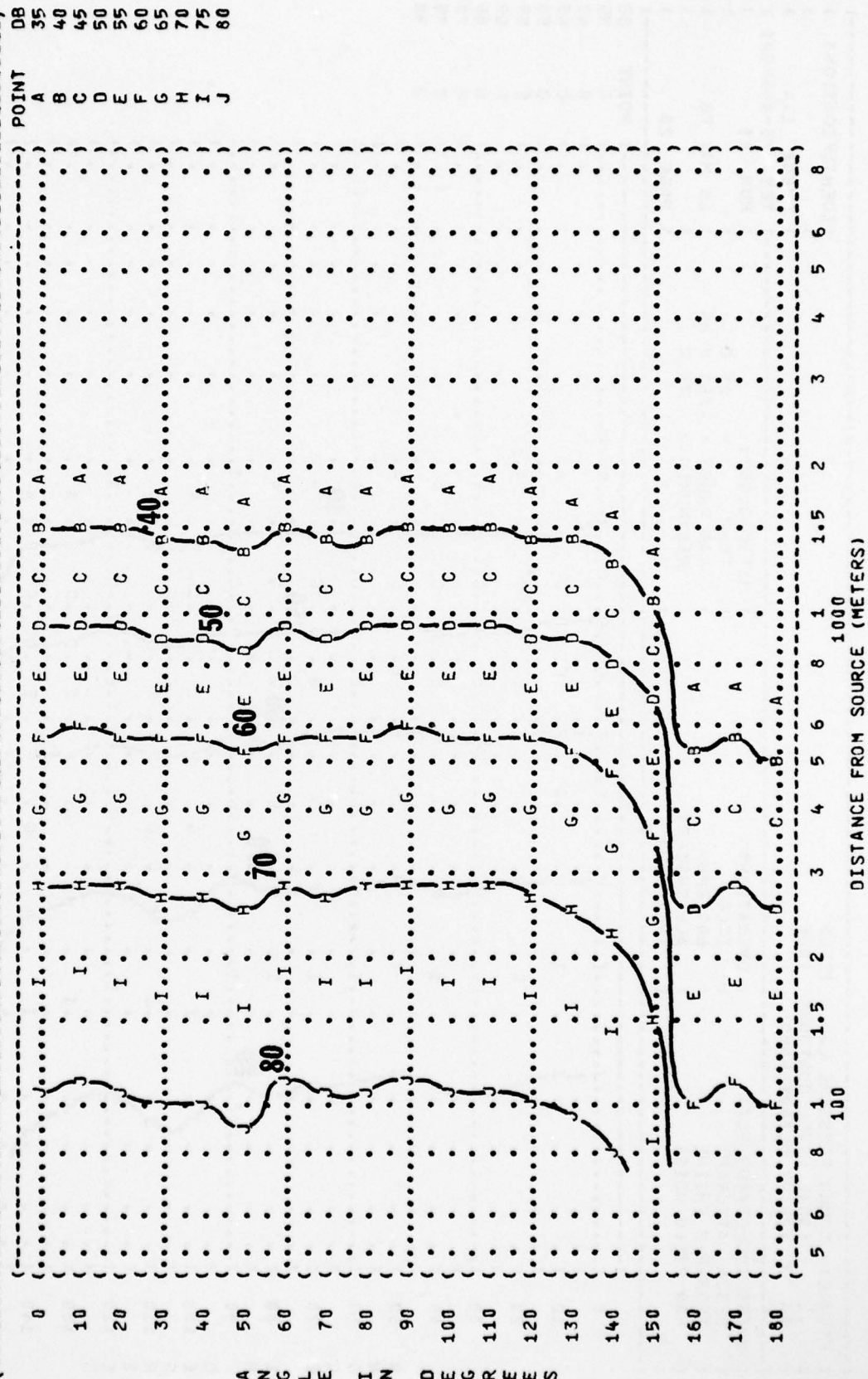
(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (63 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (B-52H AIRCRAFT)
 (TF33-P-3 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (IDLE)
 (60% RPM)
 (ALL ENGINES)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-044-001)
 (RUN 01)
 (28 MAY 76)
 (PAGE 19)



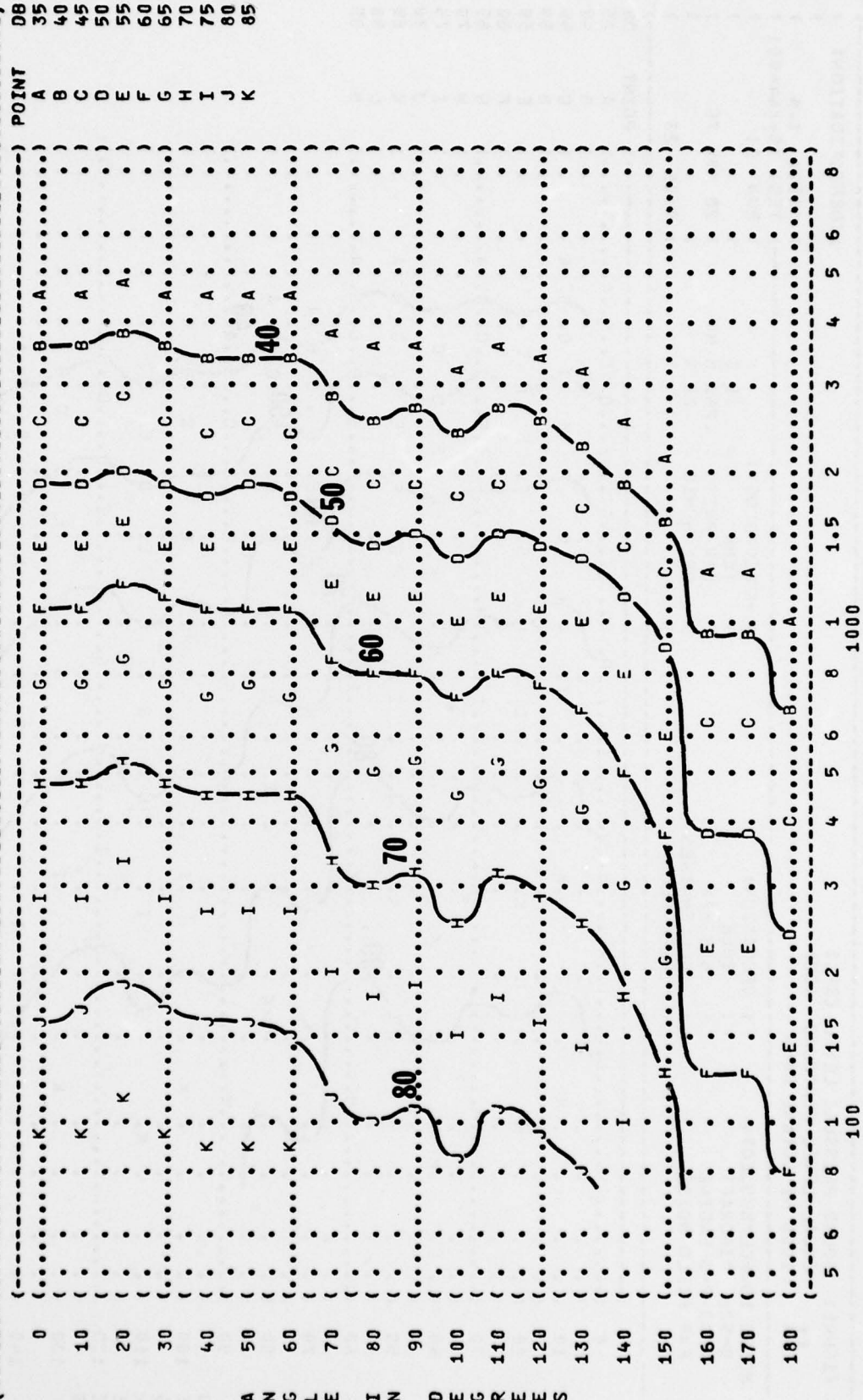
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( ( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( ( EQUAL LEVEL CONTOURS (DB) ) )
( ( 11 ) OMEGA 1.4 )
( ( 125 HZ OCTAVE BAND ) TEST 75-044-001 )
( ( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( ( B-52H AIRCRAFT ) TEMP = 15 C )
( ( TF33-P-3 ENGINE ) BAR PRESS = .760 M HG )
( ( FAR FIELD NOISE ) ALL ENGINES )
( ( ) FREE FLOW ) REL HUMID = 70 %
( ( ) ) PAGE 20 )
```



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (250 HZ OCTAVE BAND
 (11
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 01
 (NOISE SOURCE/SUBJECT:
 (B-52H AIRCRAFT
 (TF33-P-3 ENGINE
 (FAR FIELD NOISE
 (OPERATION:
 (IDLE
 (60% RPM
 (ALL ENGINES
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 21

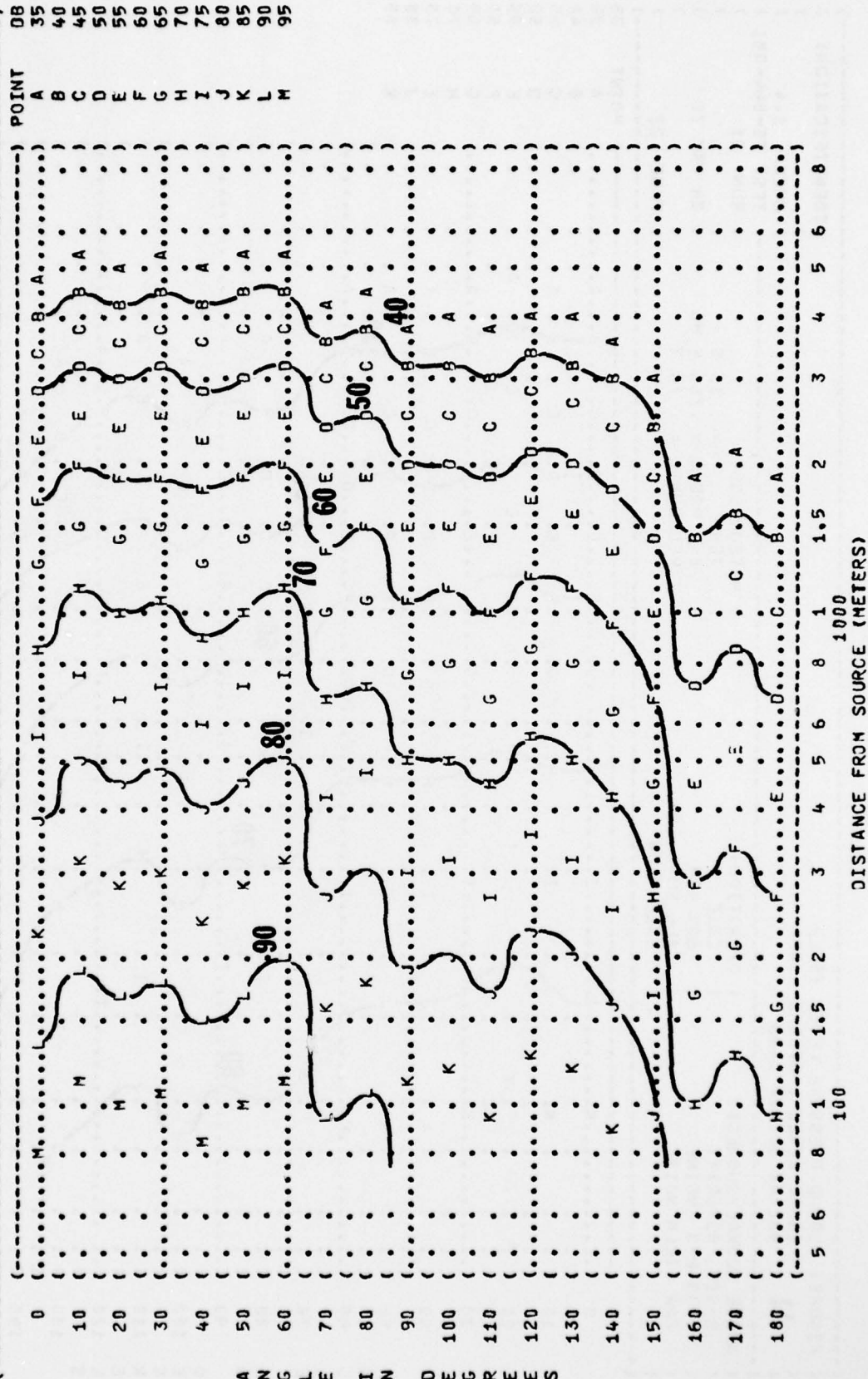


(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (DB))
 (11 500 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (B-52H AIRCRAFT)
 (TF33-P-3 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (IDLE)
 (60% RPM)
 (ALL ENGINES)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-044-001)
 (RUN 01)
 (28 MAY 76)
 (PAGE 22)

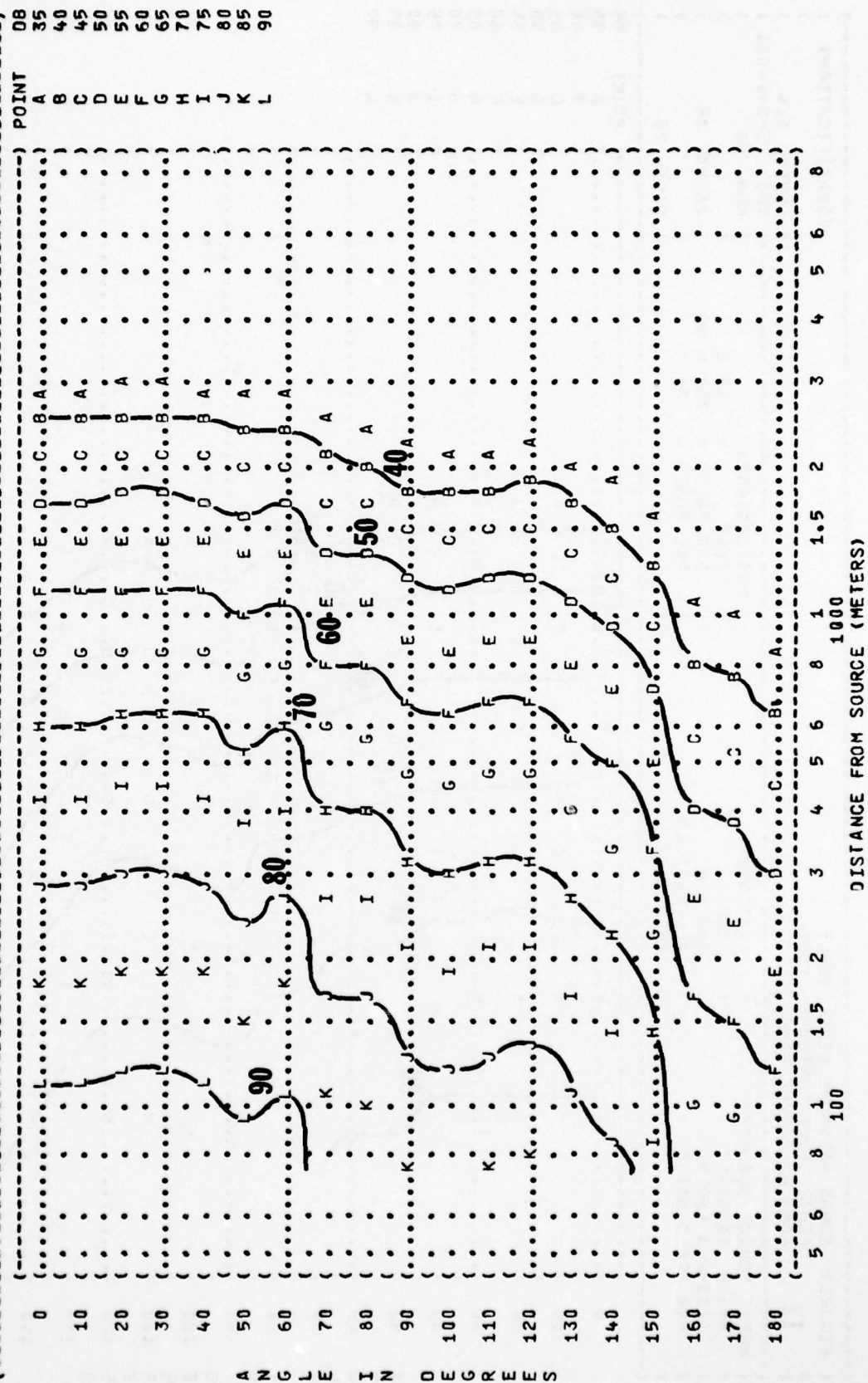


A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (1000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (8-52H AIRCRAFT (IDLE
 (TF33-P-3 ENGINE (60% RPM
 (FAR FIELD NOISE (ALL ENGINES
 ((FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 01
 (28 MAY 76
 (PAGE 23



```
(-----)
( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( EQUAL LEVEL CONTOURS (DB) ) )
( 11 ) OMEGA 1.4 )
( 2000 HZ OCTAVE BAND ) TEST 75-044-001 )
( NOISE SOURCE/SUBJECT: ) RUN 01 )
( B-52H AIRCRAFT ) )
( TF33-P-3 ENGINE ) TEMP = 15 C )
( FAR FIELD NOISE ) BAR PRESS = .760 M HG )
( ) REL HUMID = 70 % )
( ) FREE FLOW ) PAGE 24 )
(-----)
```



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (4000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (8-52H AIRCRAFT
 (IF33-P-3 ENGINE
 (FAR FIELD NOISE
 (OPERATION:
 (IDLE
 (60% RPM
 (ALL ENGINES
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 01
 (28 MAY 76
 (PAGE 25

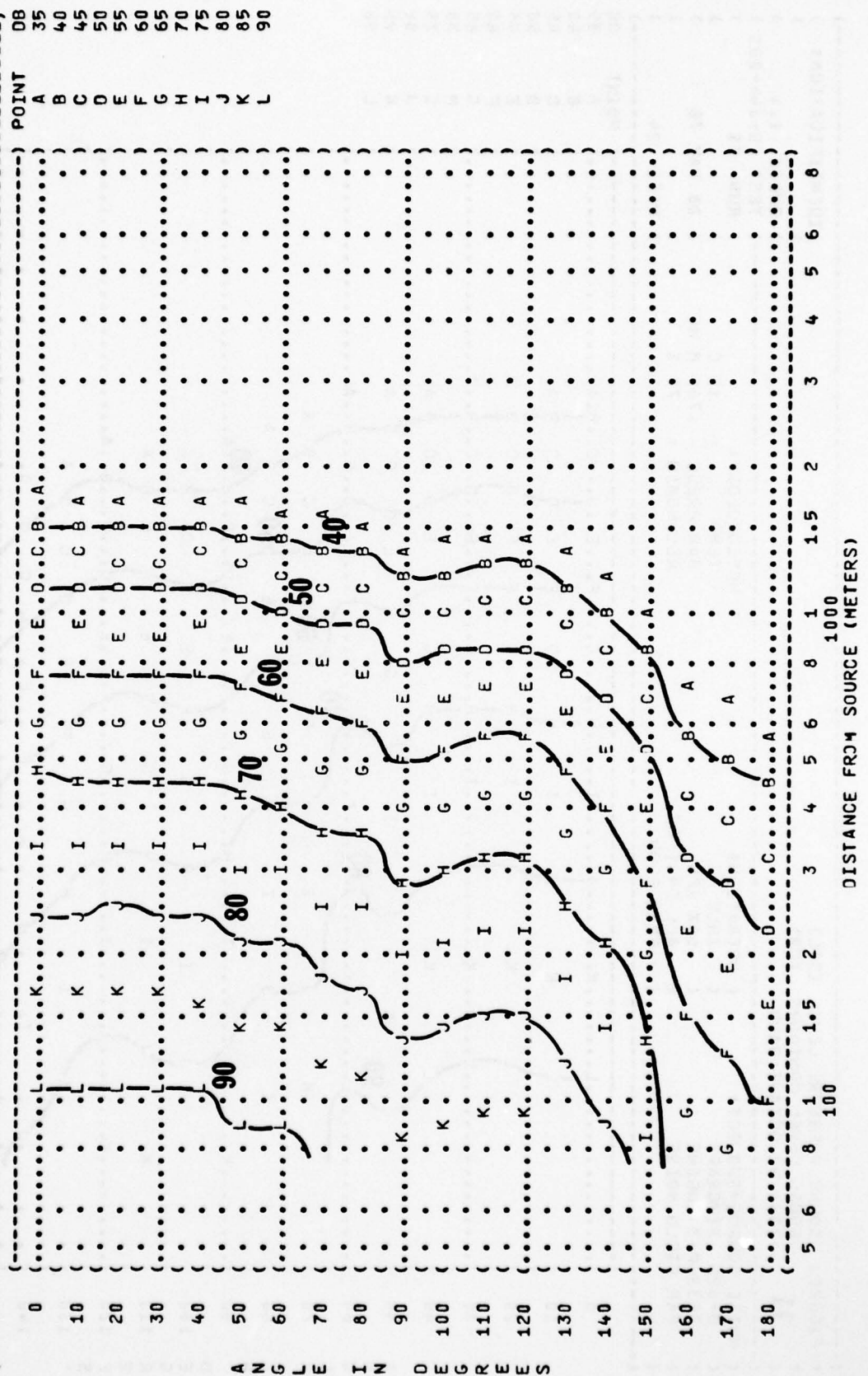


FIGURE: SOUND PRESSURE LEVEL (SPL)
 EQUAL LEVEL CONTOURS (DB)
 8000 HZ OCTAVE BAND

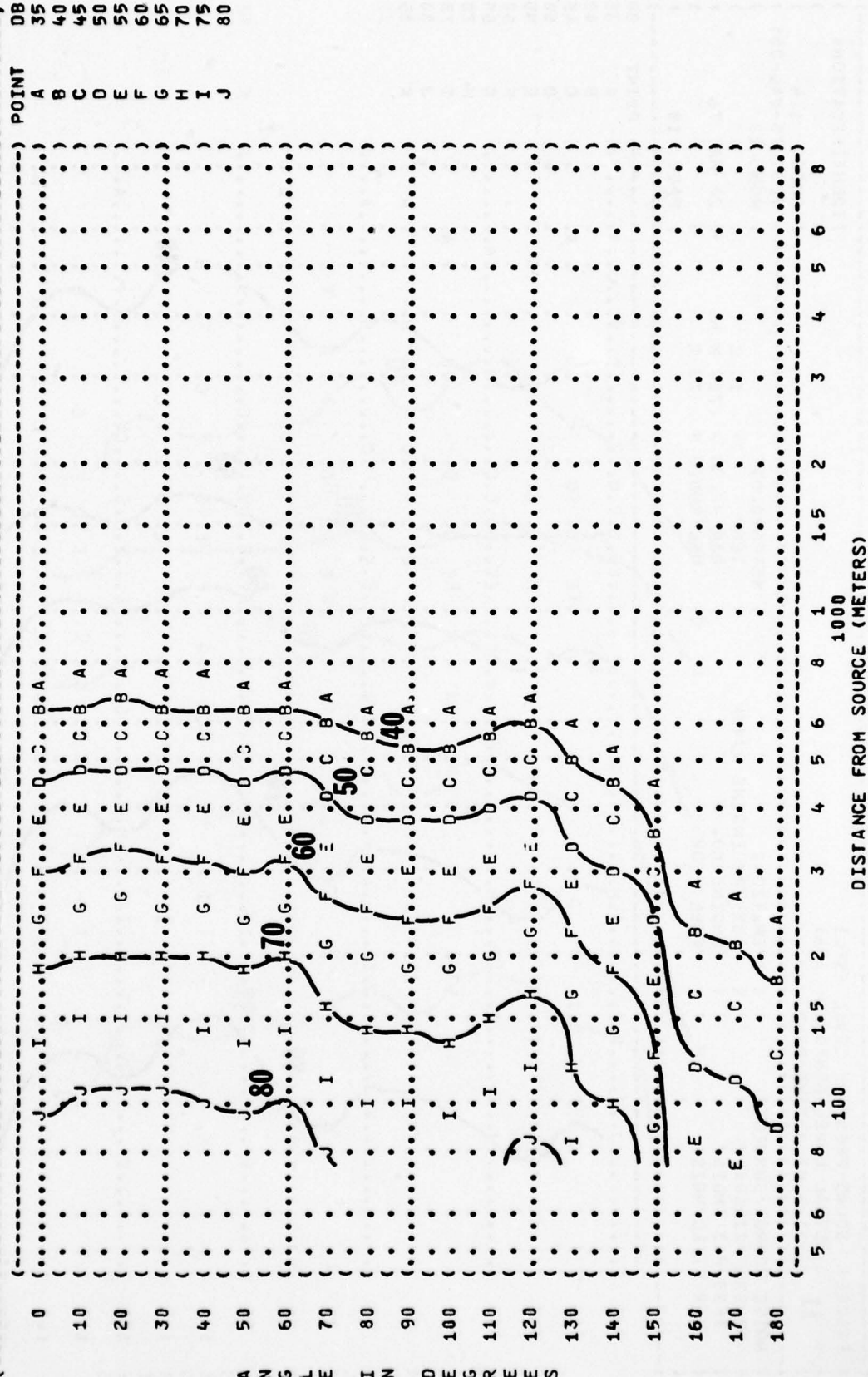
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IDENTIFICATION:
 OMEGA 1.4
 TEST 75-044-001
 RUN 01
 28 MAY 76
 PAGE 26

NOISE SOURCE/SUBJECT:
 B-52H AIRCRAFT
 TF33-P-3 ENGINE
 FAR FIELD NOISE

OPERATION:
 IDLE
 50% RPM
 ALL ENGINES
 FREE FLOW

METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %



() IDENTIFICATION: ()
 ()
 () OMEGA 1.4
 () TEST 75-044-001
 () RUN 02
 ()
 () METEOROLOGY: ()
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 ()
 () PAGE 18
 ()
 () NOISE SOURCE/SUBJECT: ()
 () B-52H AIRCRAFT ()
 () TF33-P-3 ENGINE ()
 () FAR FIELD NOISE ()
 ()
 () OPERATION: ()
 () 80% RPM ENGINE RJNUP ()
 () ENGINE NO. 4 ()
 () FREE FLOW ()
 ()

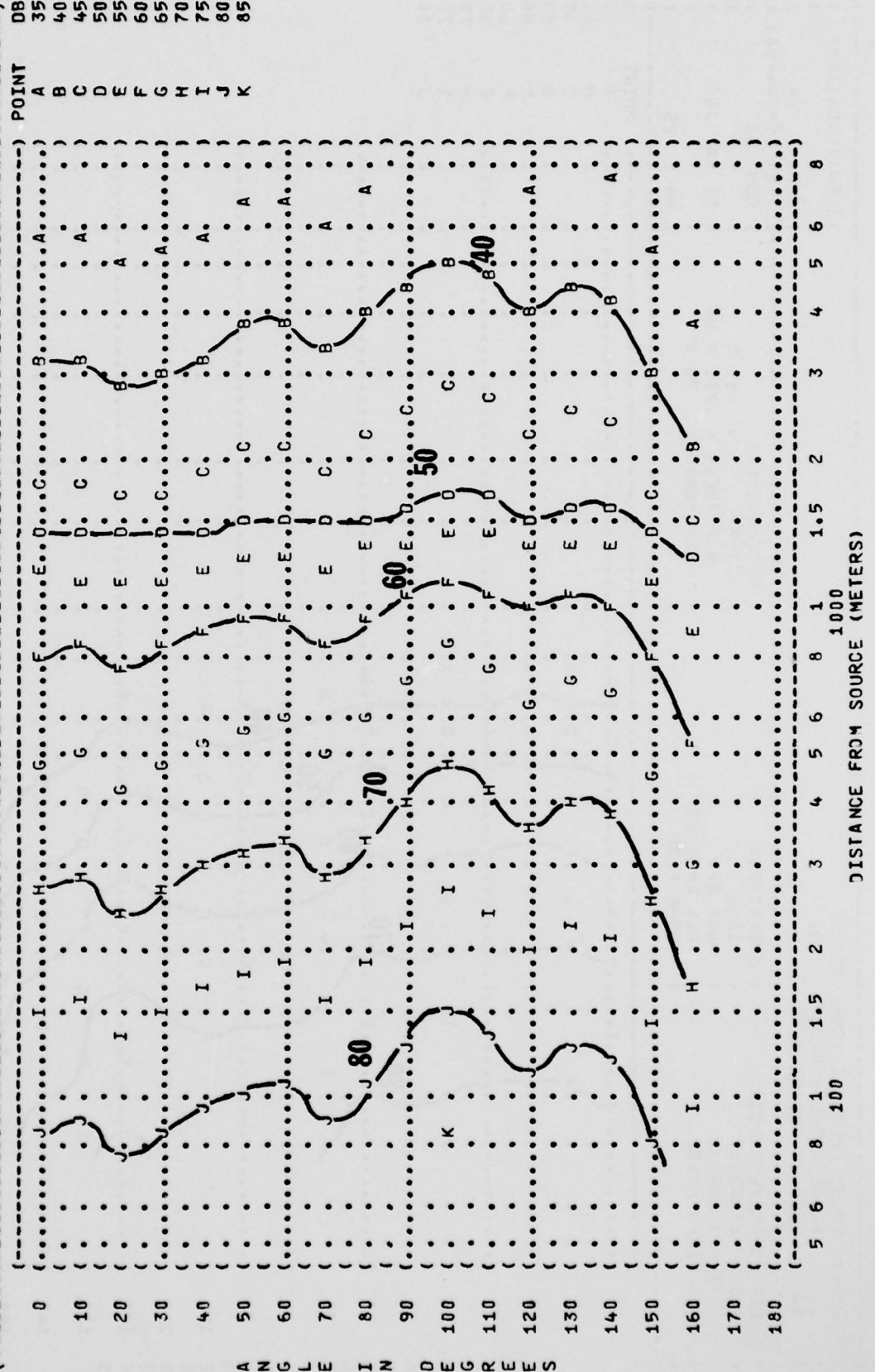
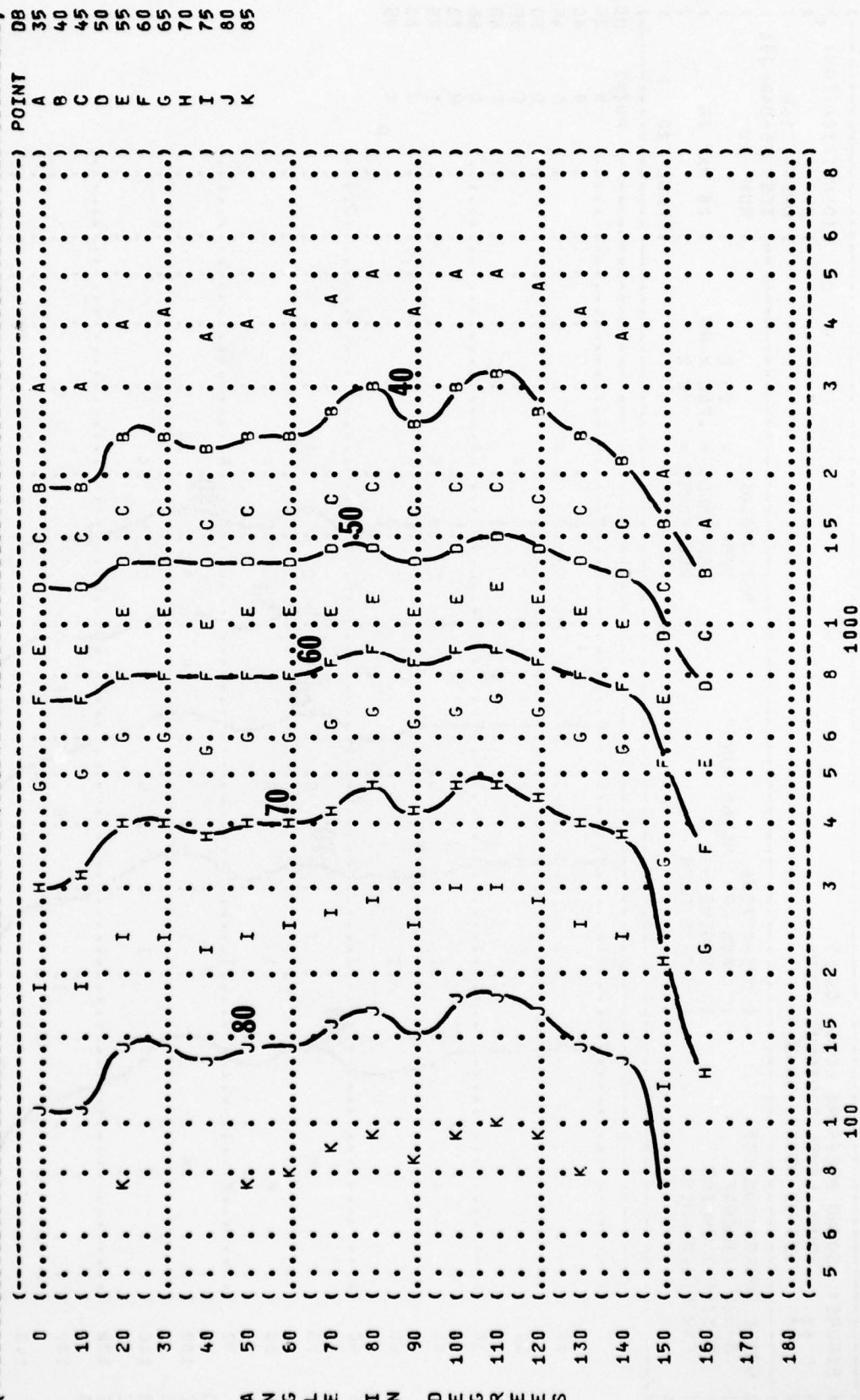
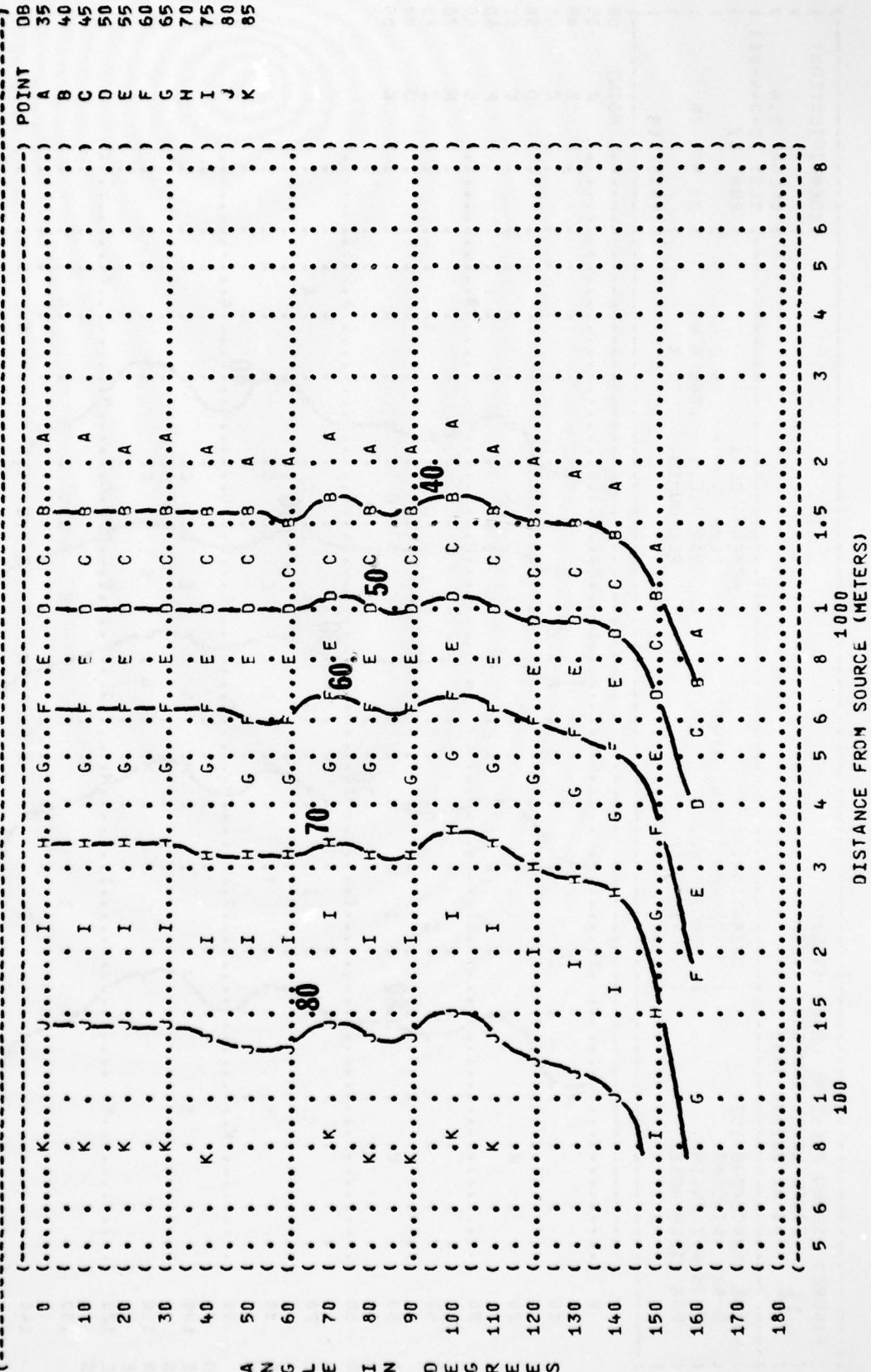


FIGURE:	SOUND PRESSURE LEVEL {SPL}	IDENTIFICATION:
11	EQUAL LEVEL CONTOURS (DB)	
	63 HZ OCTAVE BAND	OMEGA 1.4
		TEST 75-044-001
	NOISE SOURCE/SUBJECT:	RUN 02
	B-52H AIRCRAFT	
	TF33-P-3 ENGINE	
	FAR FIELD NOISE	
	OPERATION:	METEOROLOGY:
	80% RPM ENGINE RJNUP	TEMP = 15 C
	ENGINE NO. 4	BAR PRESS = .760 M HG
	FREE FLOW	REL HUMID = 70 %
		PAGE 19



DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 125 HZ OCTAVE BAND
 (IDENTIFICATION:)
 () OMEGA 1.4
 () TEST 75-044-001
 () RUN 02
 (NOISE SOURCE/SUBJECT:)
 () OPERATION:)
 () 80% RPM ENGINE RJNUP)
 () ENGINE NO. 4)
 () FREE FLOW)
 () FAR FIELD NOISE)
 () METEOROLOGY:)
 () TEMP = 15 C)
 () BAR PRESS = .760 M HG)
 () REL HUMID = 70 %)
 () 26 MAY 76)
 () PAGE 20)



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AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/G 20/1
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK. VOLUME 82. B-52H AIR--ETC(U)
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UNCLASSIFIED

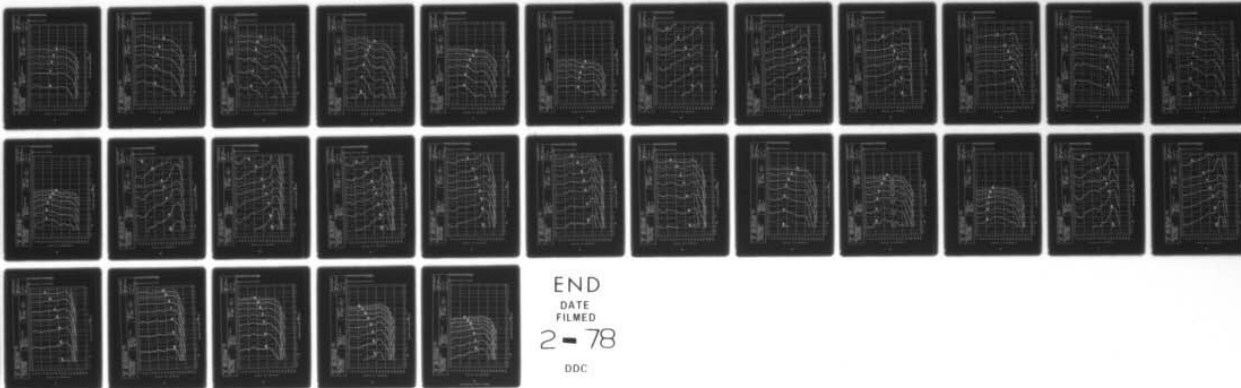
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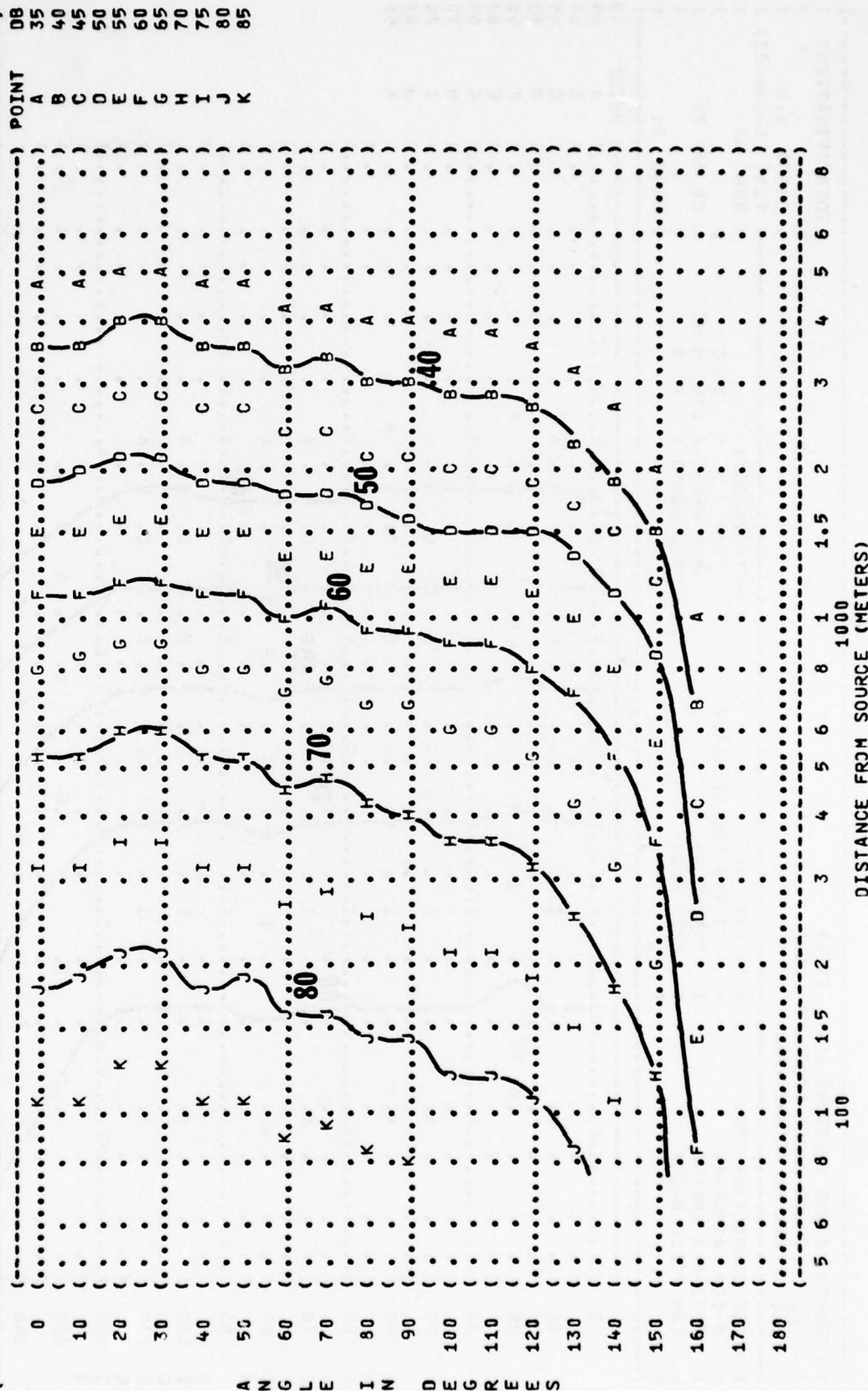
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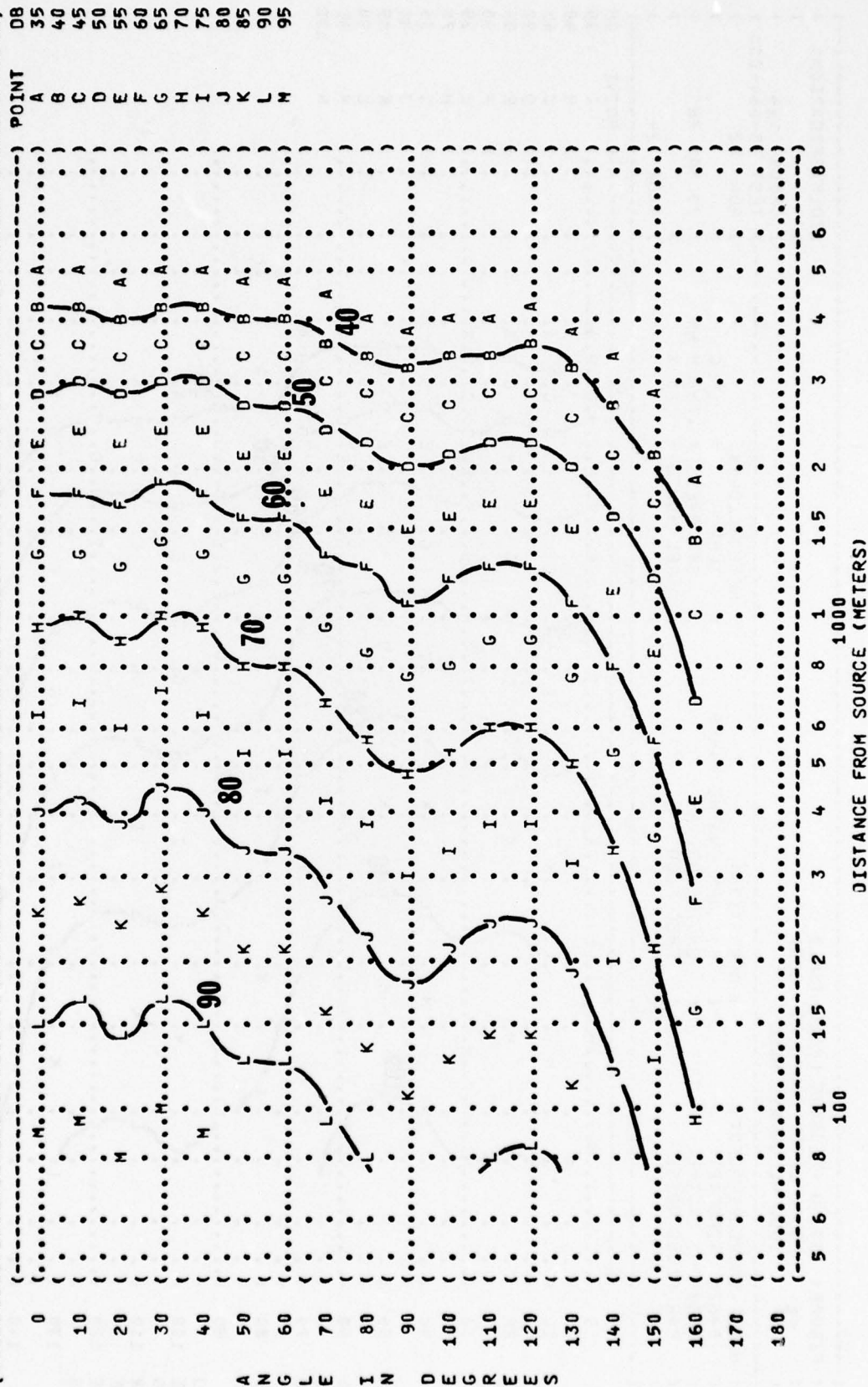
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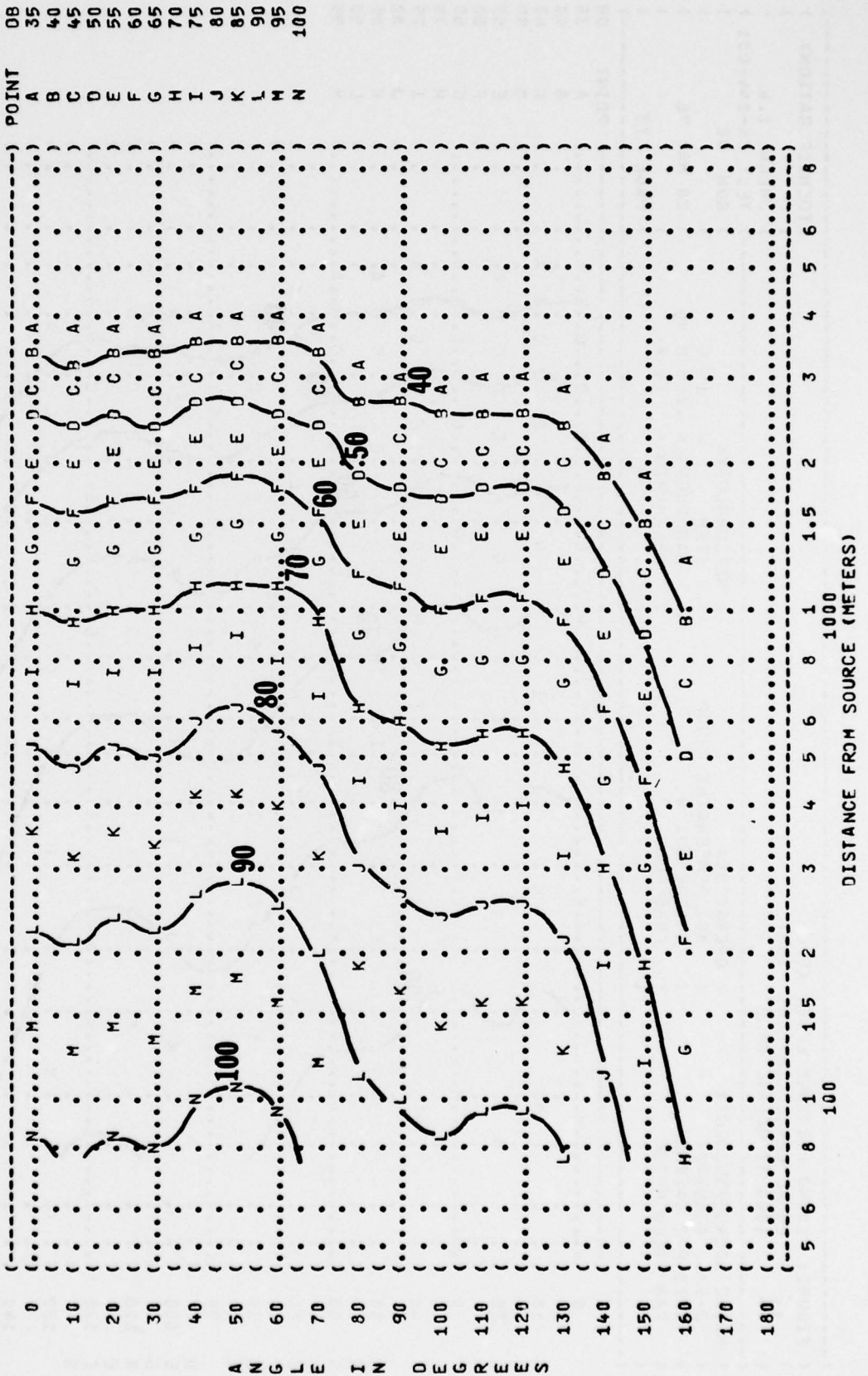
((FIGURE: SOUND PRESSURE LEVEL (SPL)
 ((EQUAL LEVEL CONTOURS (DB)
 ((**11** 500 HZ OCTAVE BAND
 (() IDENTIFICATION:)
 (() OMEGA 1.4
 (() TEST 75-044-001
 (() RUN 02
 (()
 ((NOISE SOURCE/SUBJECT:) METEOROLOGY:)
 (((80% RPM ENGINE RUNUP) TEMP = 15 C
 (((ENGINE NO. 4) BAR PRESS = .760 M HG
 (((FREE FLOW) REL HUMID = 70 %
 (()
 (() PAGE 22)



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (11 1000 HZ OCTAVE BAND
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 02
 (NOISE SOURCE/SUBJECT:
 (OPERATION:
 (80% RPM ENGINE RUNUP
 (B-52H AIRCRAFT
 (ENGINE NO. 4
 (TF33-P-3 ENGINE
 (FREE FLOW
 (FAR FIELD NOISE
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 23



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (2000 HZ OCTAVE BAND
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 02
 (NOISE SOURCE/SUBJECT:
 (OPERATION:
 (80% RPM ENGINE RUNUP
 (ENGINE NO. 4
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 24



A N
 G L
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 E E
 G R
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 S S

() FIGURE: SOUND PRESSURE LEVEL (SPL)
 () EQUAL LEVEL CONTOURS (DB)
 () 4000 HZ OCTAVE BAND
 () 11
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 75-044-001
 () RUN 02
 () NOISE SOURCE/SUBJECT:
 () 80% RPM ENGINE RJNUP
 () 8-52H AIRCRAFT
 () ENGINE NO. 4
 () FREE FLOW
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () PAGE 25

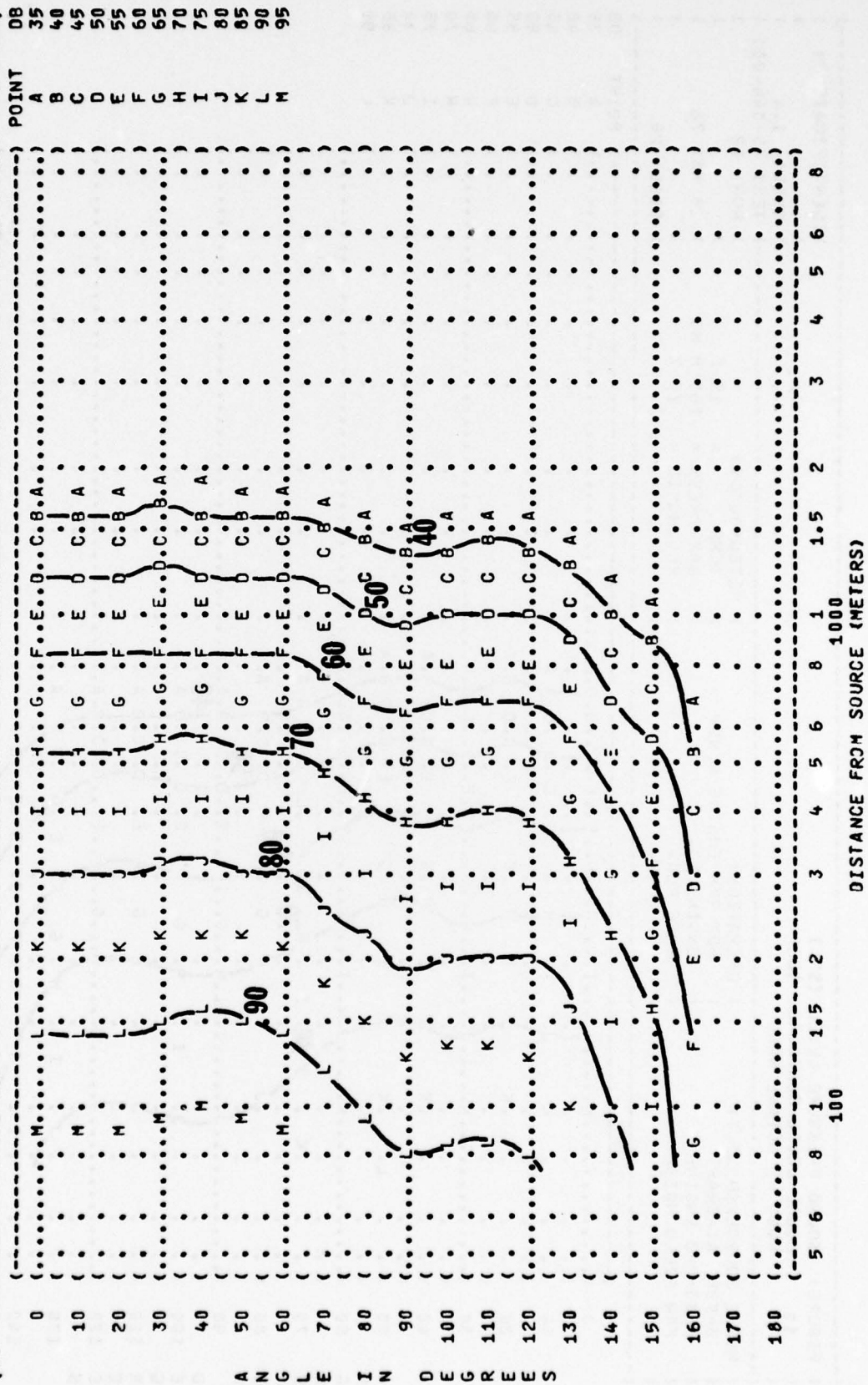


FIGURE: SOUND PRESSURE LEVEL (SPL)
 11 EQUAL LEVEL CONTOURS (DB)
 8000 HZ OCTAVE BAND

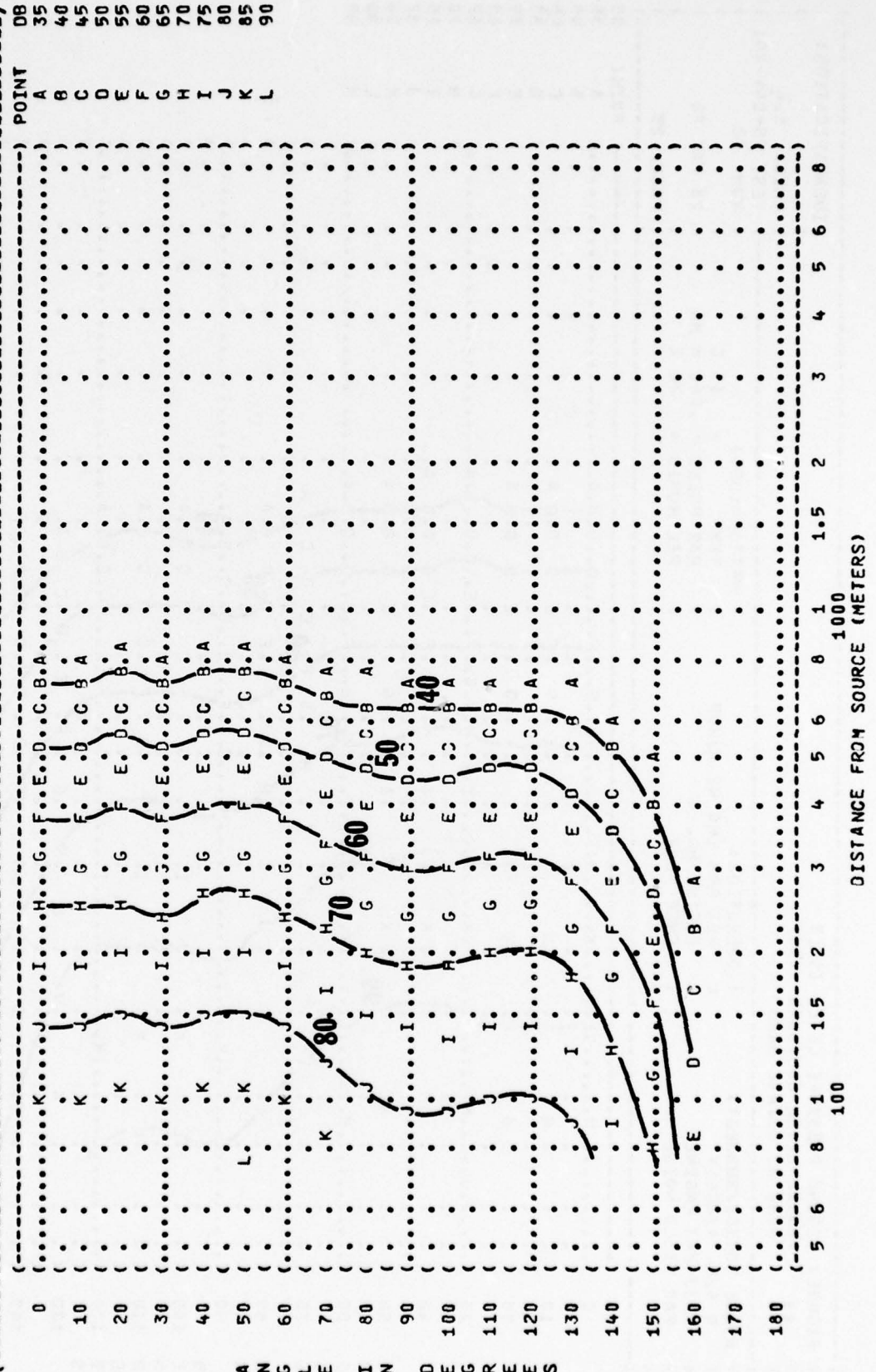
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 TEST 75-044-001
 RUN 02

NOISE SOURCE/SUBJECT:
 B-52H AIRCRAFT
 TF33-P-3 ENGINE
 FAR FIELD NOISE

OPERATION:
 80% RPM ENGINE RUNUP
 ENGINE NO. 4
 FREE FLOW

METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %

PAGE 26

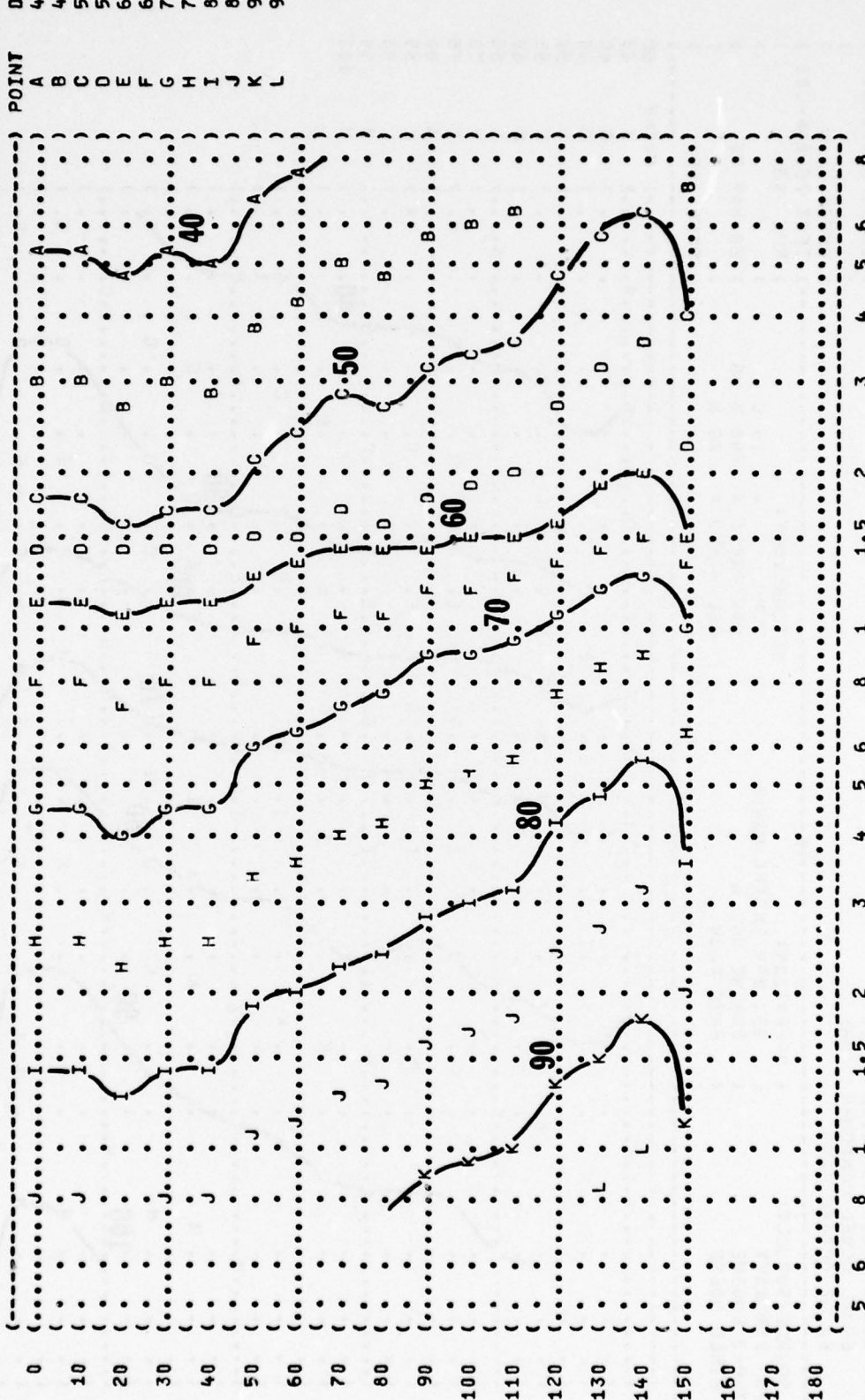


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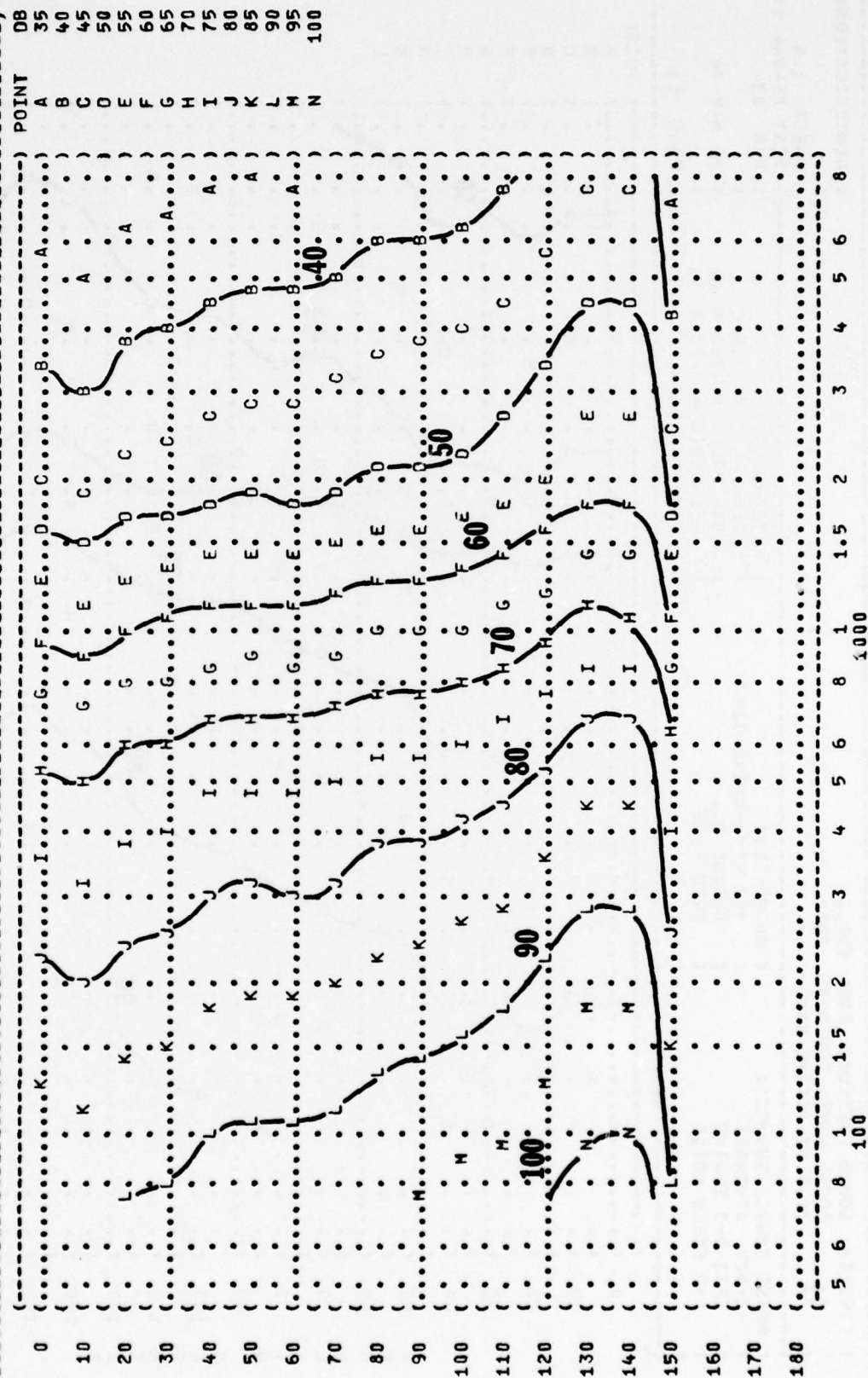
FIGURE: SOUND PRESSURE LEVEL {SPL}
EQUAL LEVEL CONTOURS (DB)
31.5 HZ OCTAVE BAND

11

) IDENTIFICATION:
)
) OMEGA 1.4

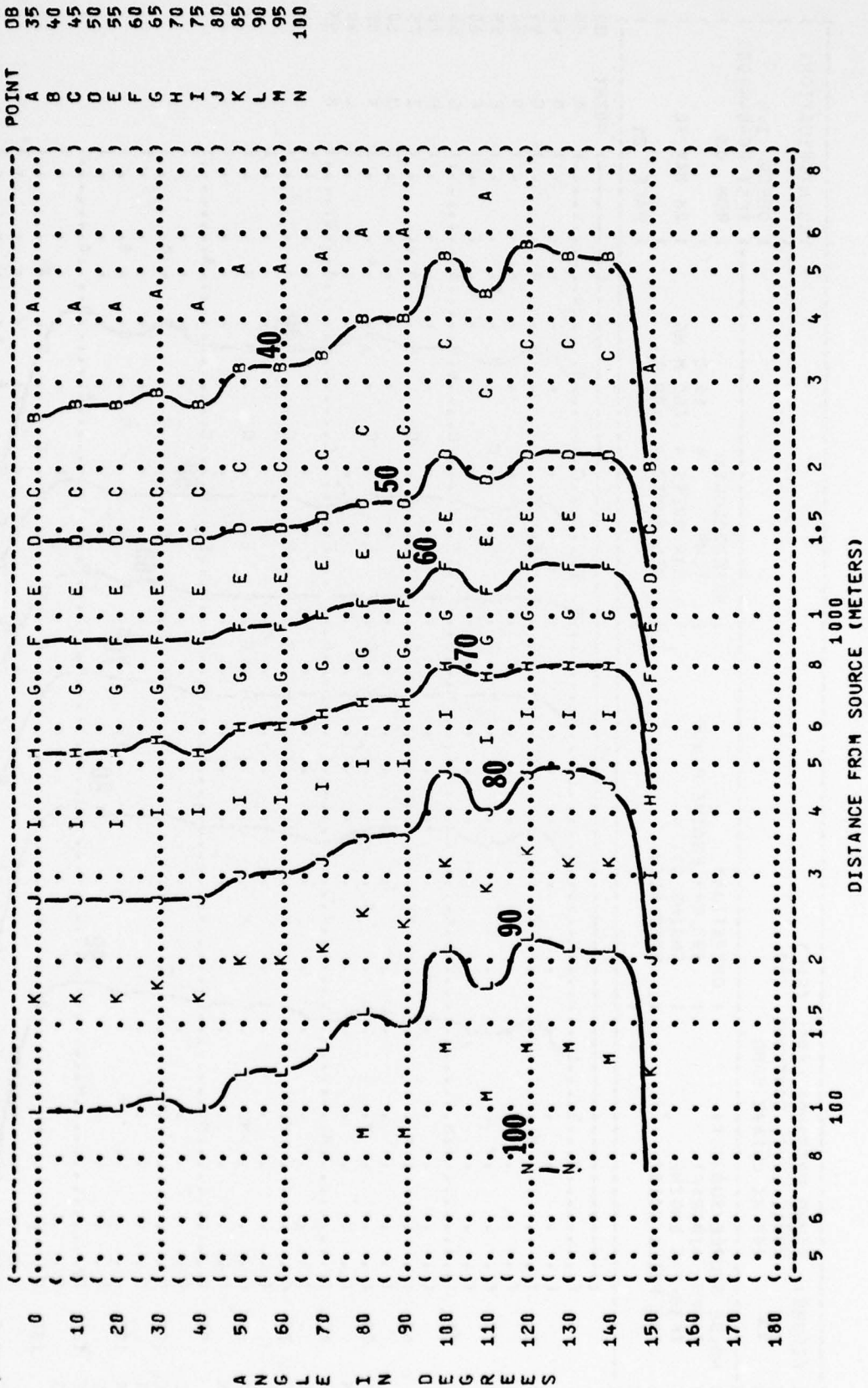


(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (DB))
 (11 63 HZ OCTAVE BAND)
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 (TF33-P-3 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (95% RPM ENGINE RJNUP)
 (ENGINE NO. 4)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-044-001)
 (RUN 03)
 (28 MAY 76)
 (PAGE 19)

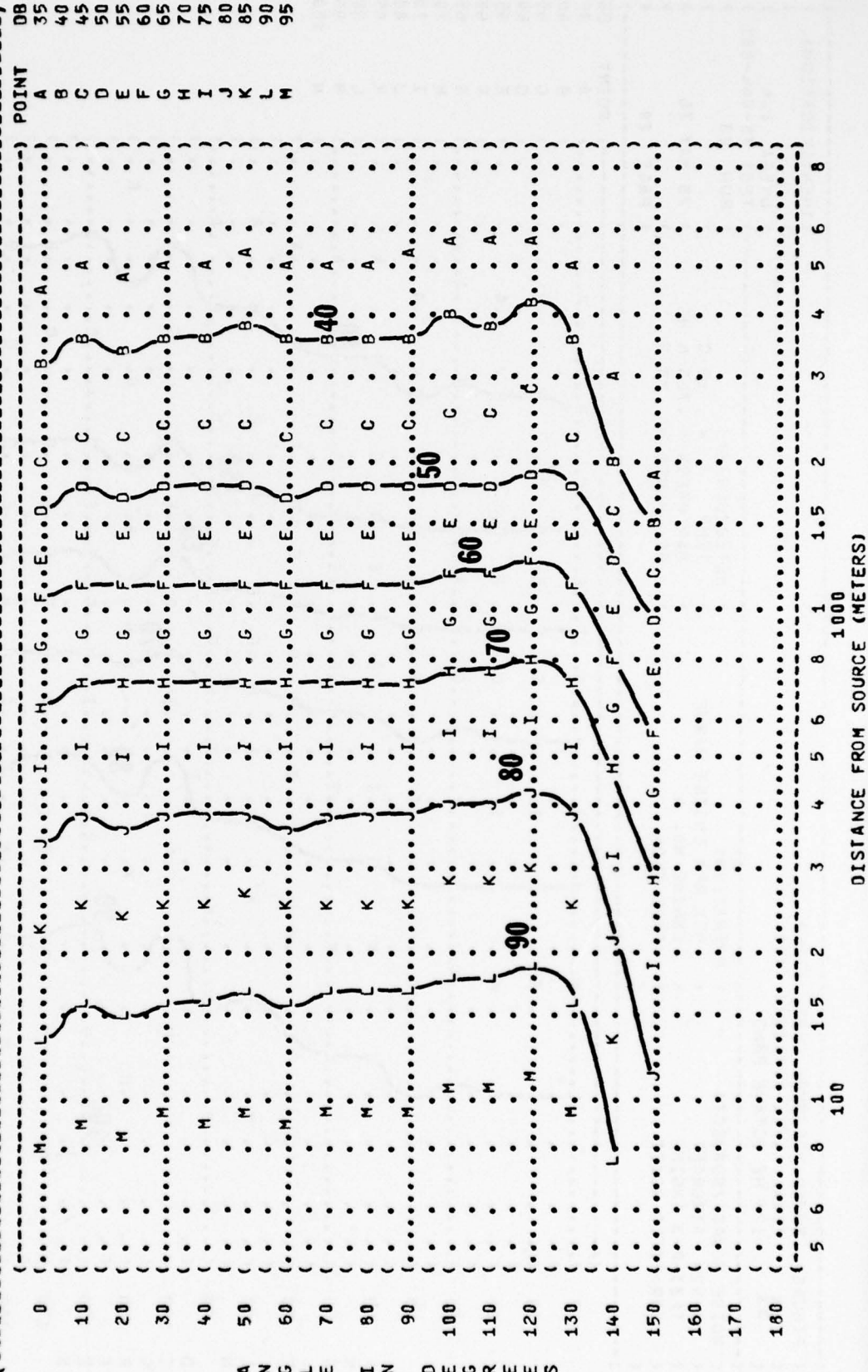


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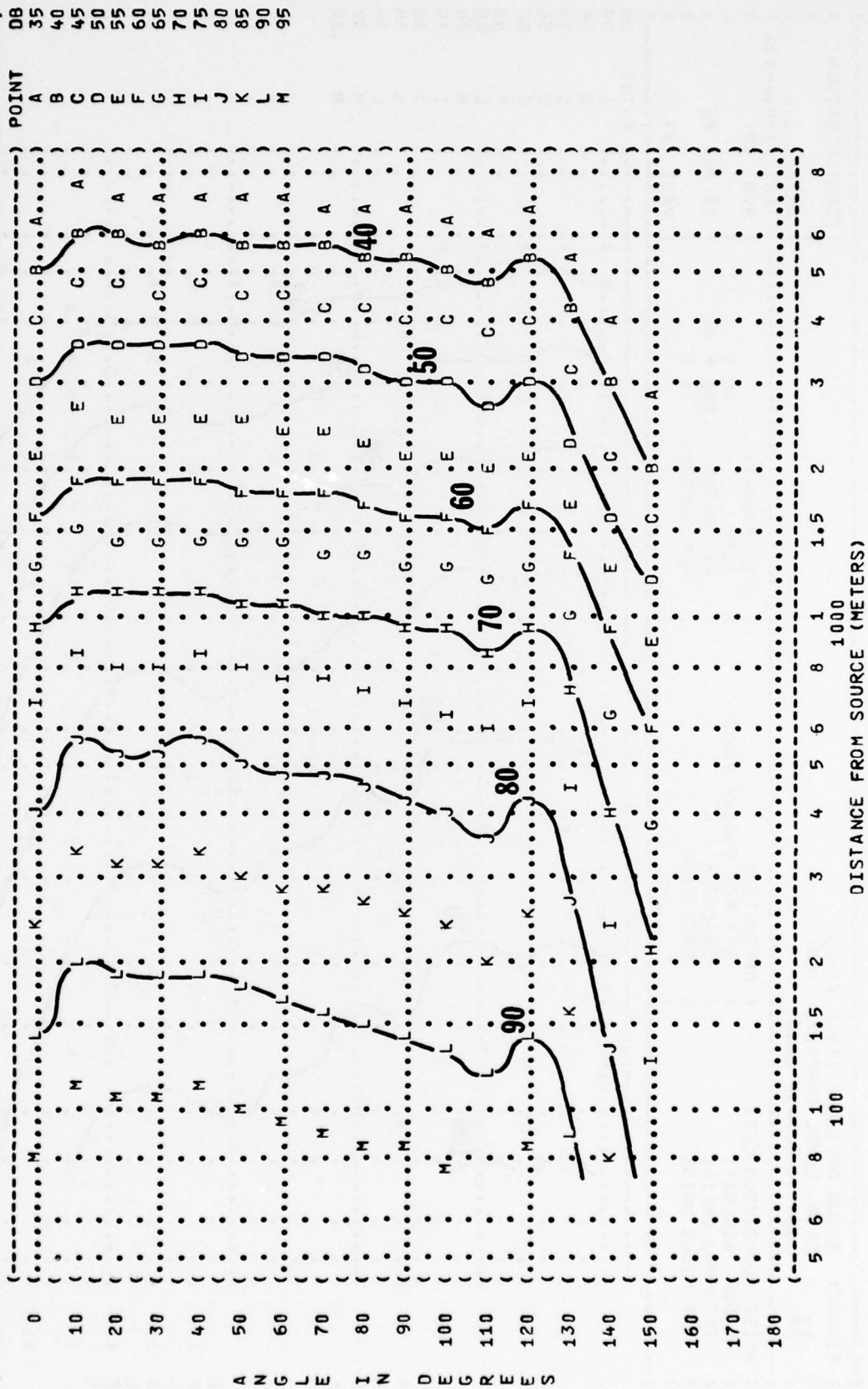
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 (FAR FIELD NOISE
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 (ENGINE NO. 4
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 03
 (28 MAY 76
 (PAGE 20



(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (250 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (B-52H AIRCRAFT)
 (TF33-P-3 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (95% RPM ENGINE RJNUP)
 (ENGINE NO. 4)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-044-001)
 (RUN 03)
 (28 MAY 76)
 (PAGE 21)



(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (500 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (B-52H AIRCRAFT)
 (TF33-P-3 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (95% RPM ENGINE RJNUP)
 (ENGINE NO. 4)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-044-001)
 (RUN 03)
 (28 MAY 76)
 (PAGE 22)



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( { FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( { EQUAL LEVEL CONTOURS (DB) ) )
( { 11 ) OMEGA 1.4 )
( { 1000 HZ OCTAVE BAND ) TEST 75-044-001 )
( { NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( { OPERATION: ) )
( { 8-52H AIRCRAFT ) TEMP = 15 C )
( { TF33-P-3 ENGINE ) BAR PRESS = .760 M HG )
( { FAR FIELD NOISE ) REL HUMID = 70 % )
( { ) ) PAGE 23 )
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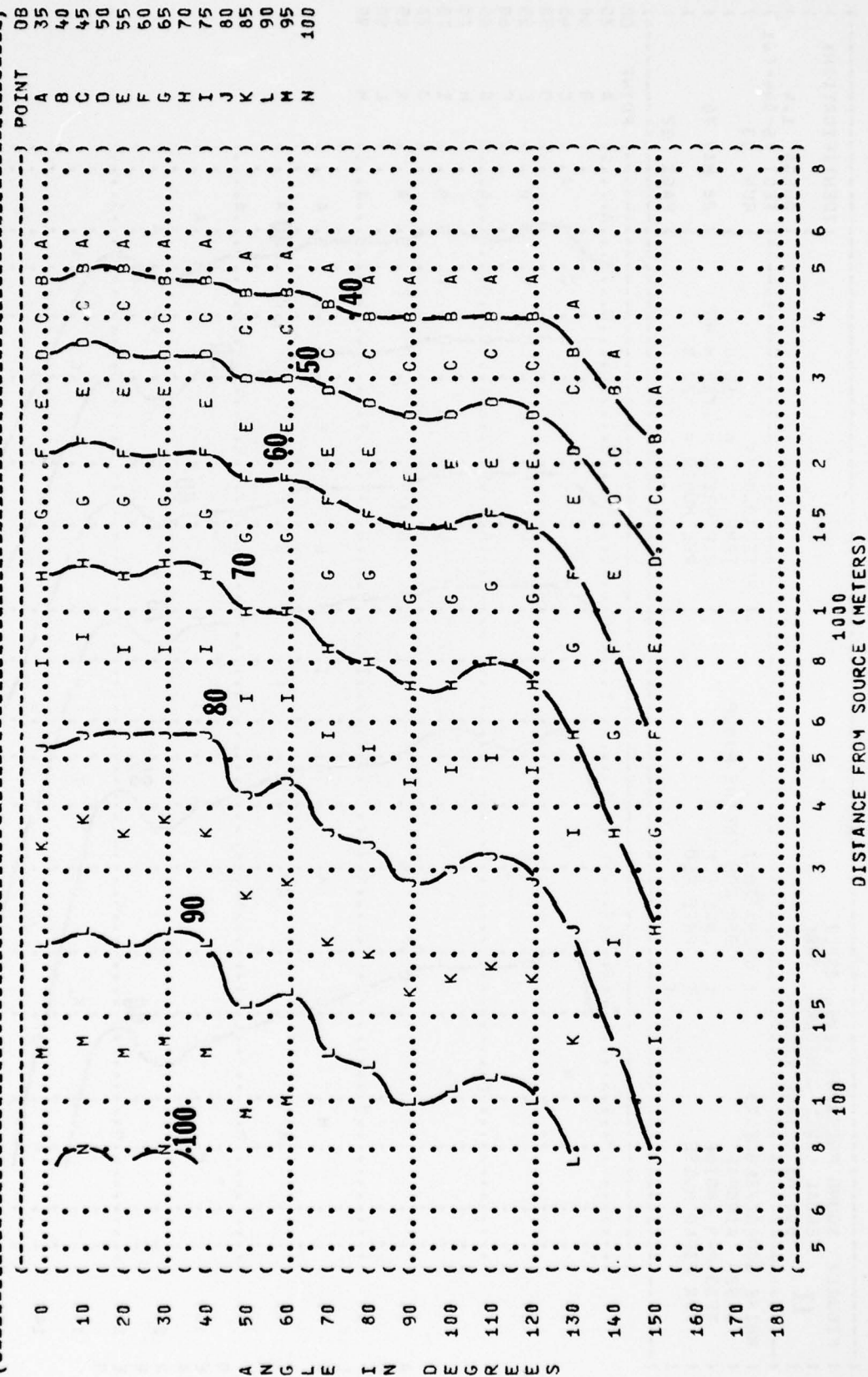


FIGURE: SOUND PRESSURE LEVEL {SPL}
 EQUAL LEVEL CONTOURS (DB)
 2000 HZ OCTAVE BAND

11

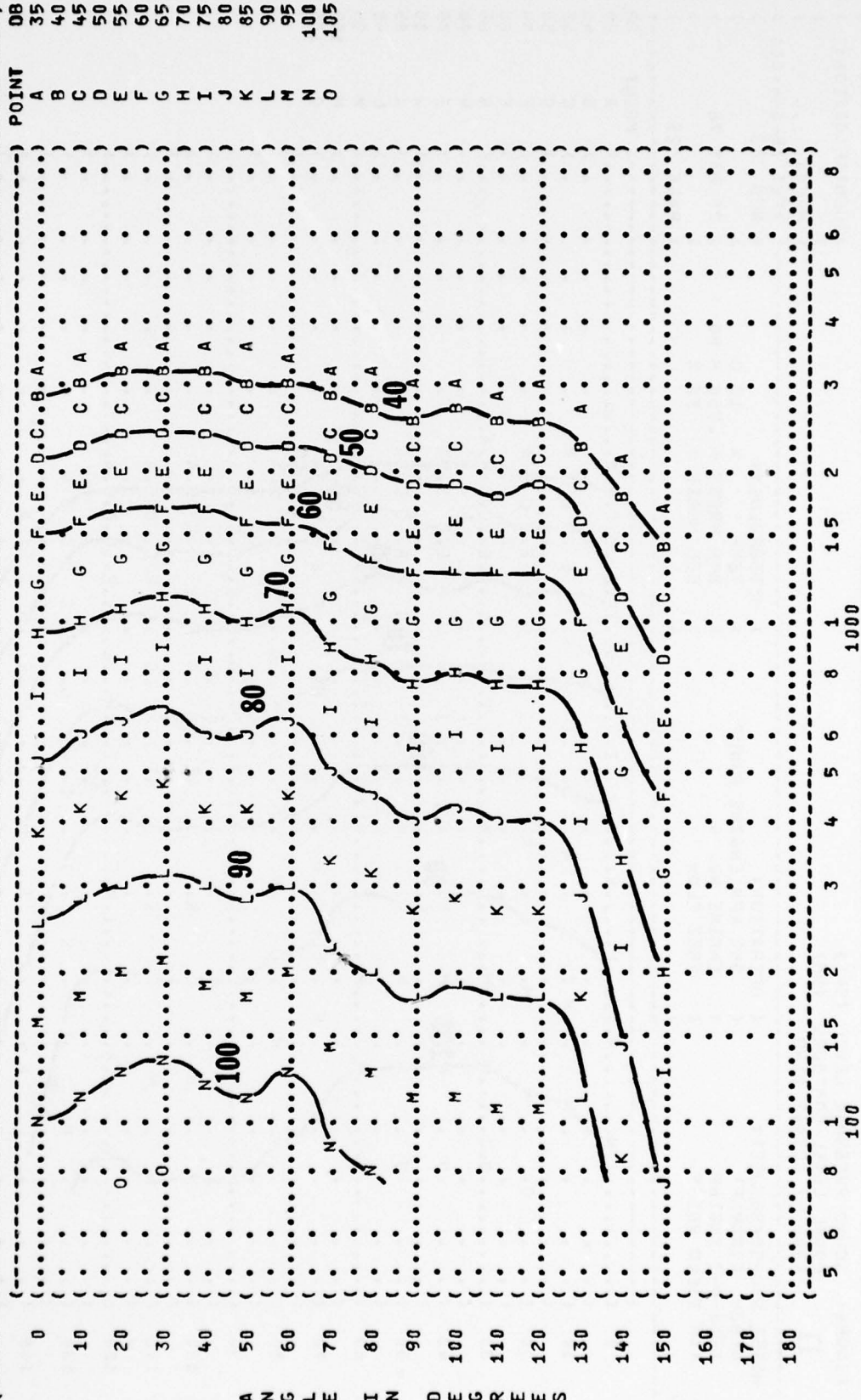
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 OMEGA 1.4
 TEST 75-044-001
 RUN 03

NOISE SOURCE/SUBJECT:
 8-52H AIRCRAFT
 TF33-P-3 ENGINE
 FAR FIELD NOISE

OPERATION:
 95% RPM ENGINE RJNUP
 ENGINE NO. 4
 FREE FLOW

METEOLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %

PAGE 24



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( { FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( ( EQUAL LEVEL CONTOURS (DB) ) ) )
( ( 11 ) ) )
( ( 4000 HZ OCTAVE BAND ) ) )
( ( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( ( B-52H AIRCRAFT ) TEMP = 15 C )
( ( TF33-P-3 ENGINE ) BAR PRESS = .760 M HG )
( ( FAR FIELD NOISE ) REL HUMID = 70 % )
( ( ) ) )
( ( ) ) )
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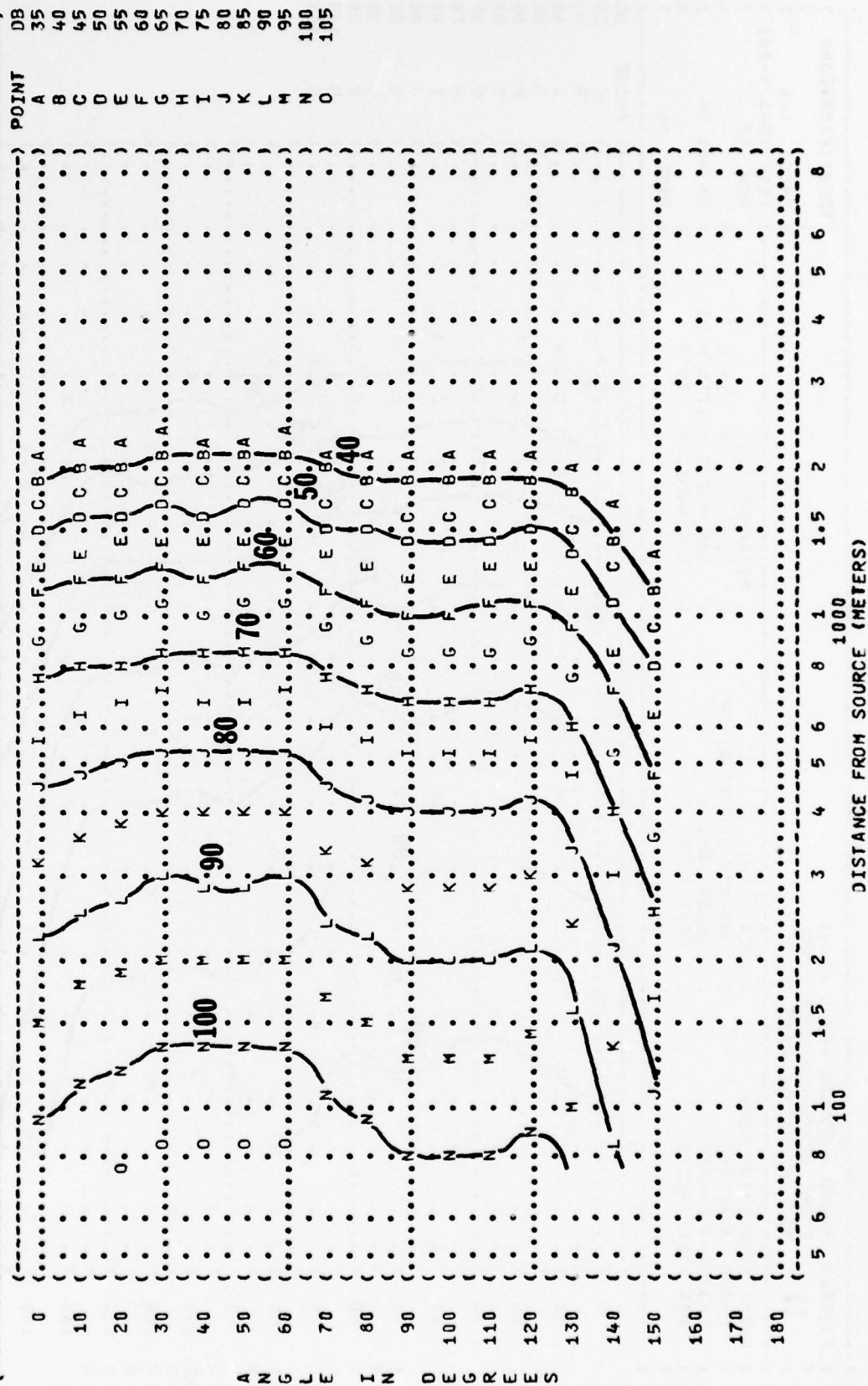


FIGURE 11
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
8000 HZ OCTAVE BAND

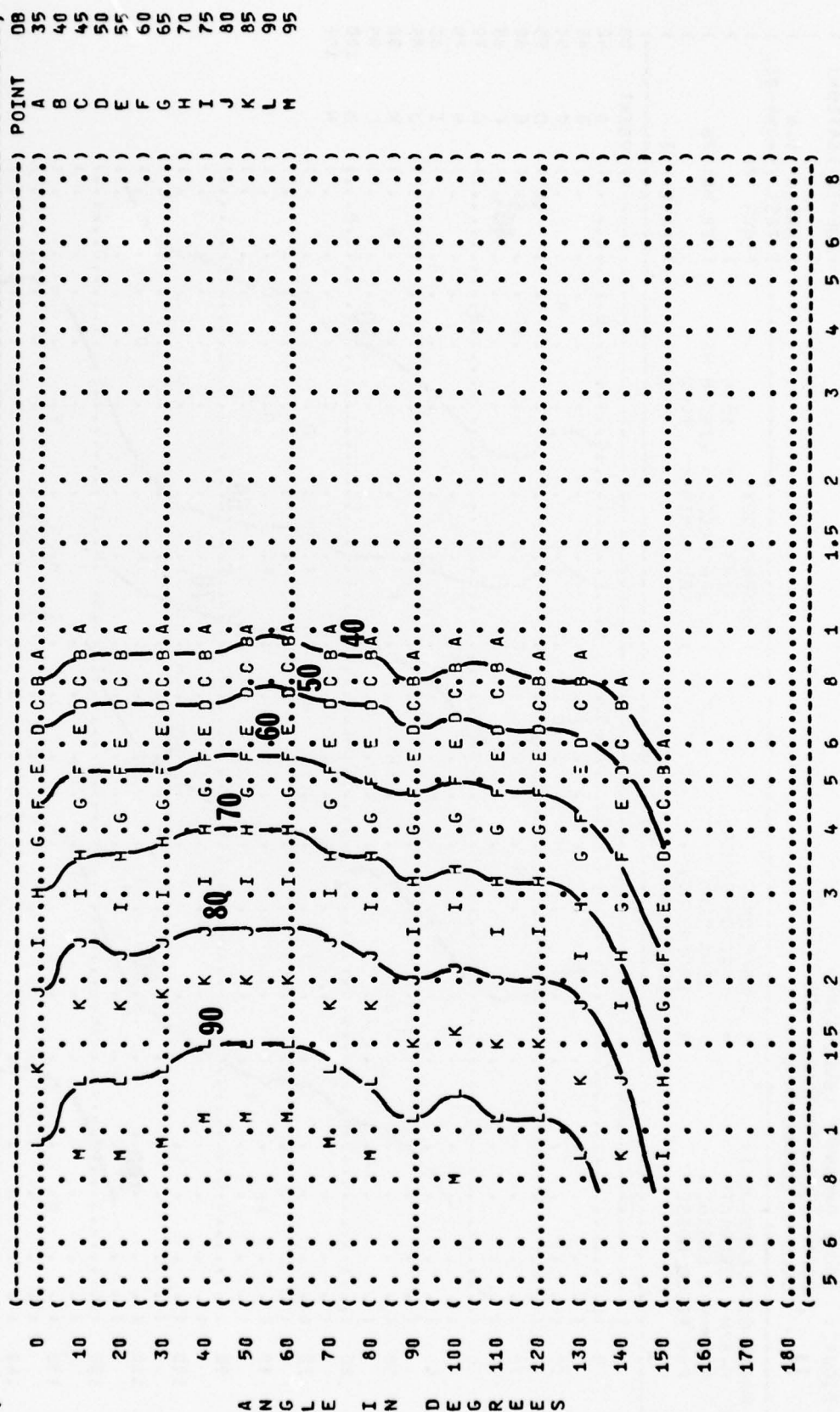
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IDENTIFICATION:
OMEGA 1.4
TEST 75-044-00
RUN 03
28 MAY 76
PAGE 26

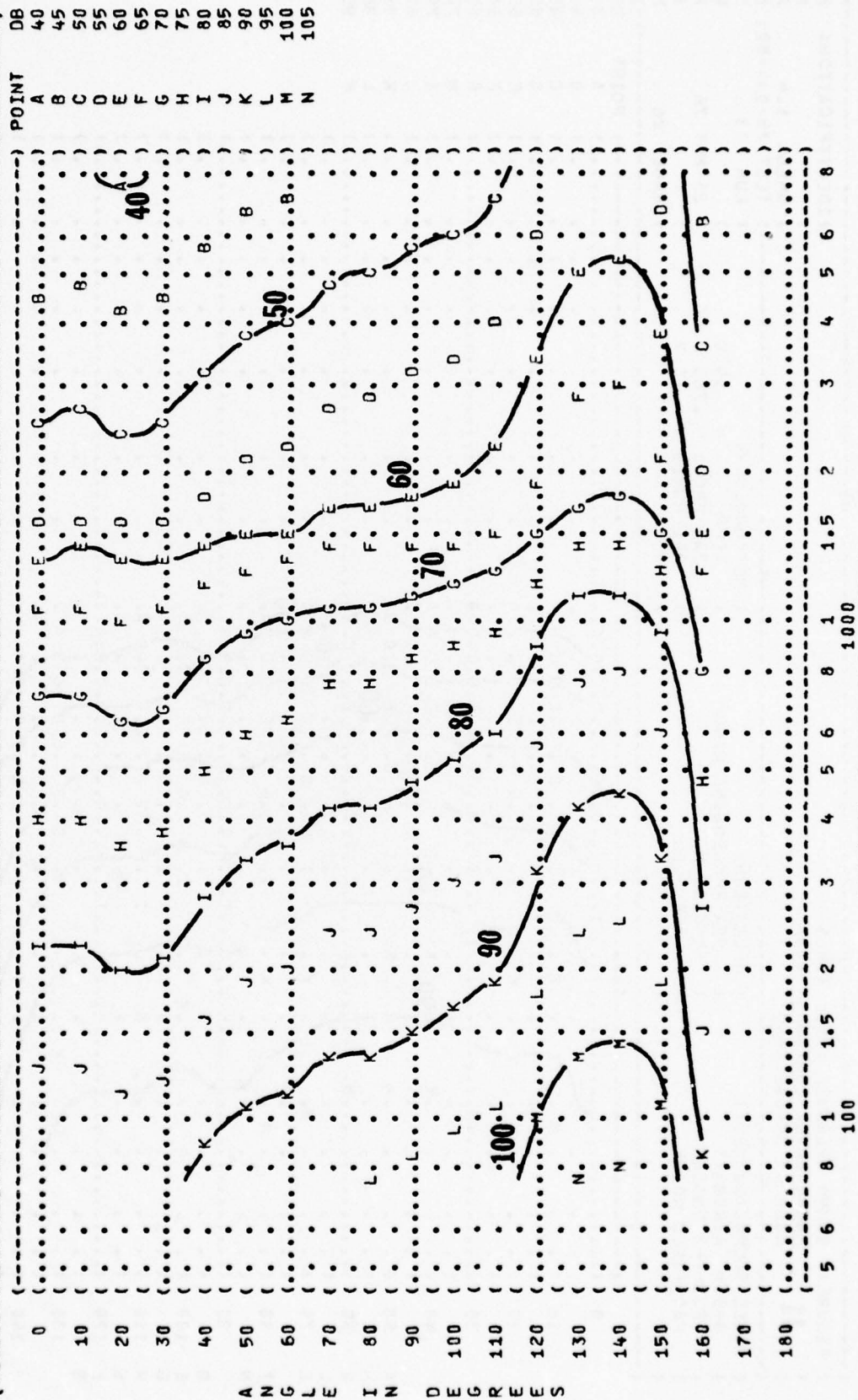
TEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

(OPERATION:
(95% RPM ENGINE RJNUP
(ENGINE NO. 4
(FREE FLOW)

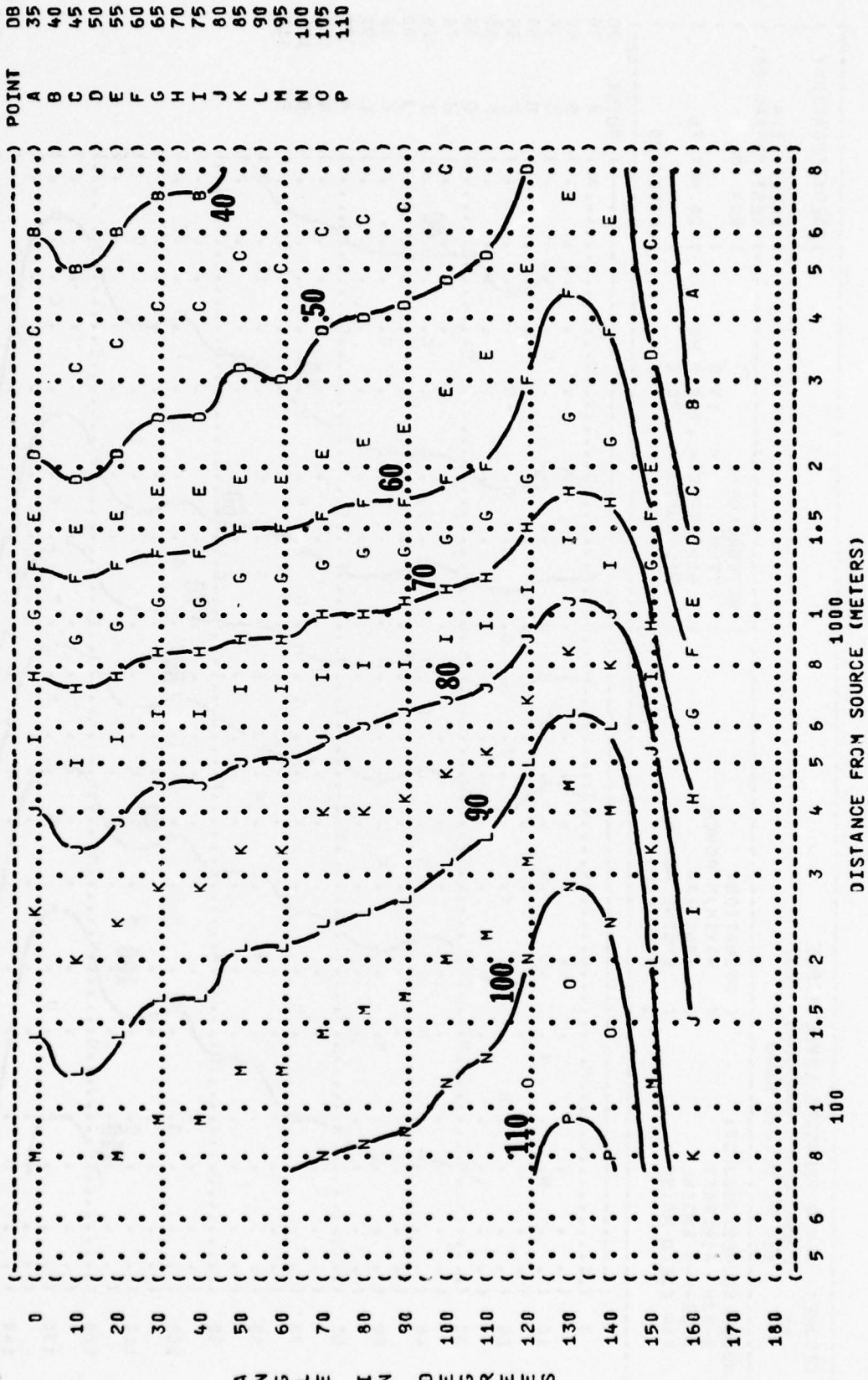
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B-52H AIRCRAFT
TF33-P-3 ENGINE
FAR FIELD NOISE

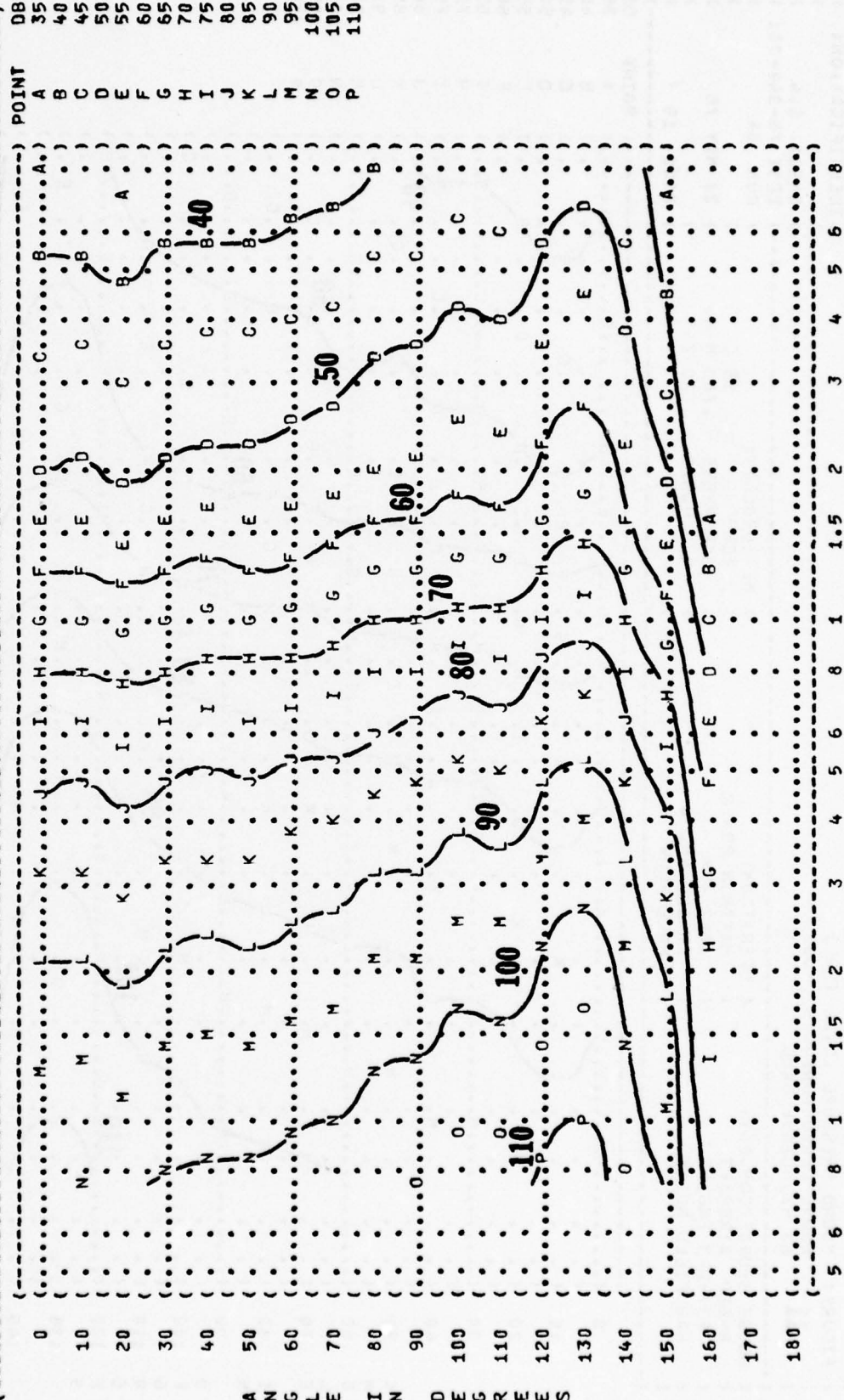


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (31.5 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
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 (TF33-P-3 ENGINE
 (FAR FIELD NOISE
 (OPERATION:
 (MAXIMUM POWER
 (104% RPM
 (ENGINE NO. 4
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 04
 (28 MAY 76
 (PAGE 18



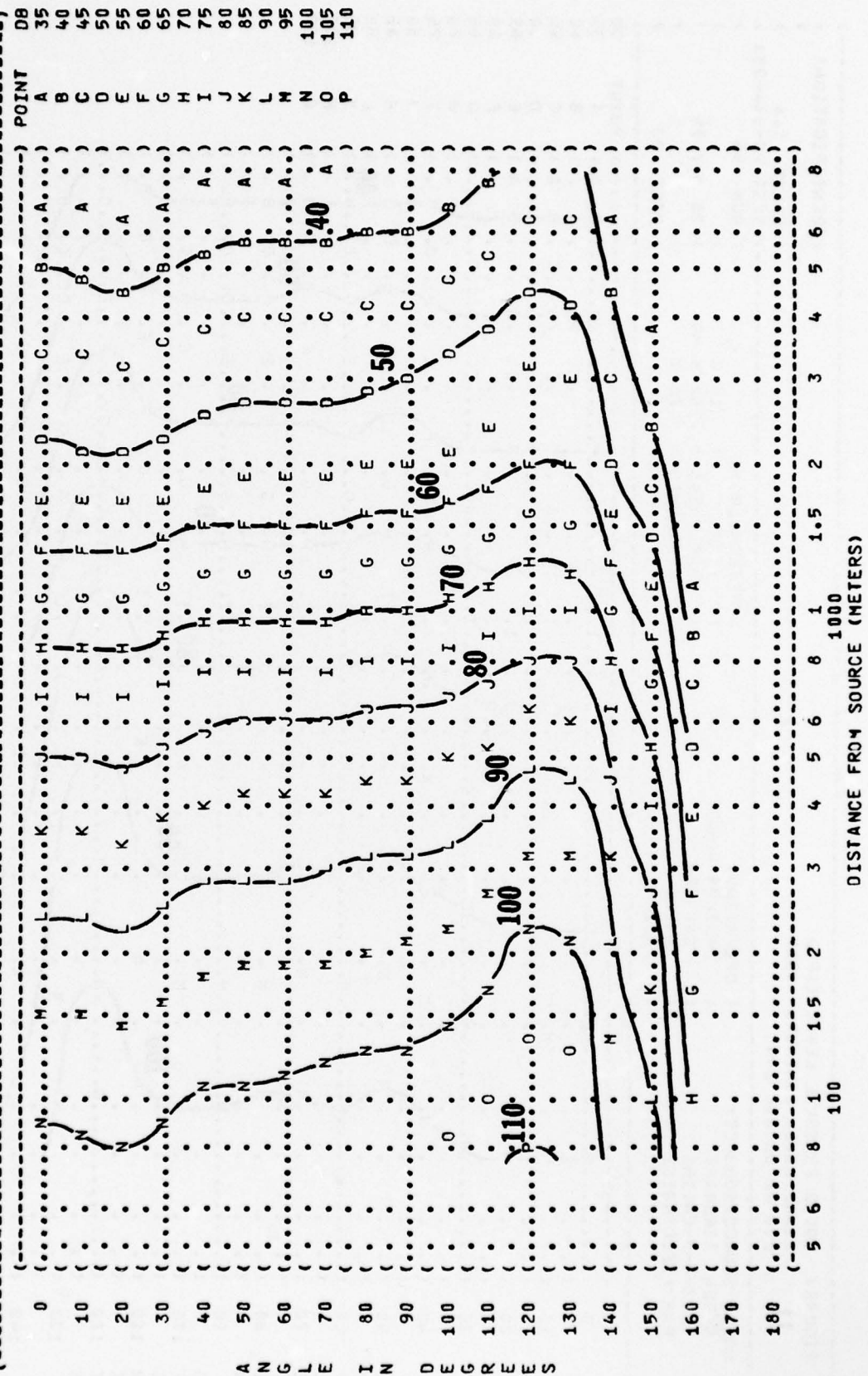
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 (TF33-P-3 ENGINE
 (FAR FIELD NOISE
 (OPERATION:
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 (104% RPM
 (ENGINE NO. 4
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 04
 (28 MAY 76
 (PAGE 19



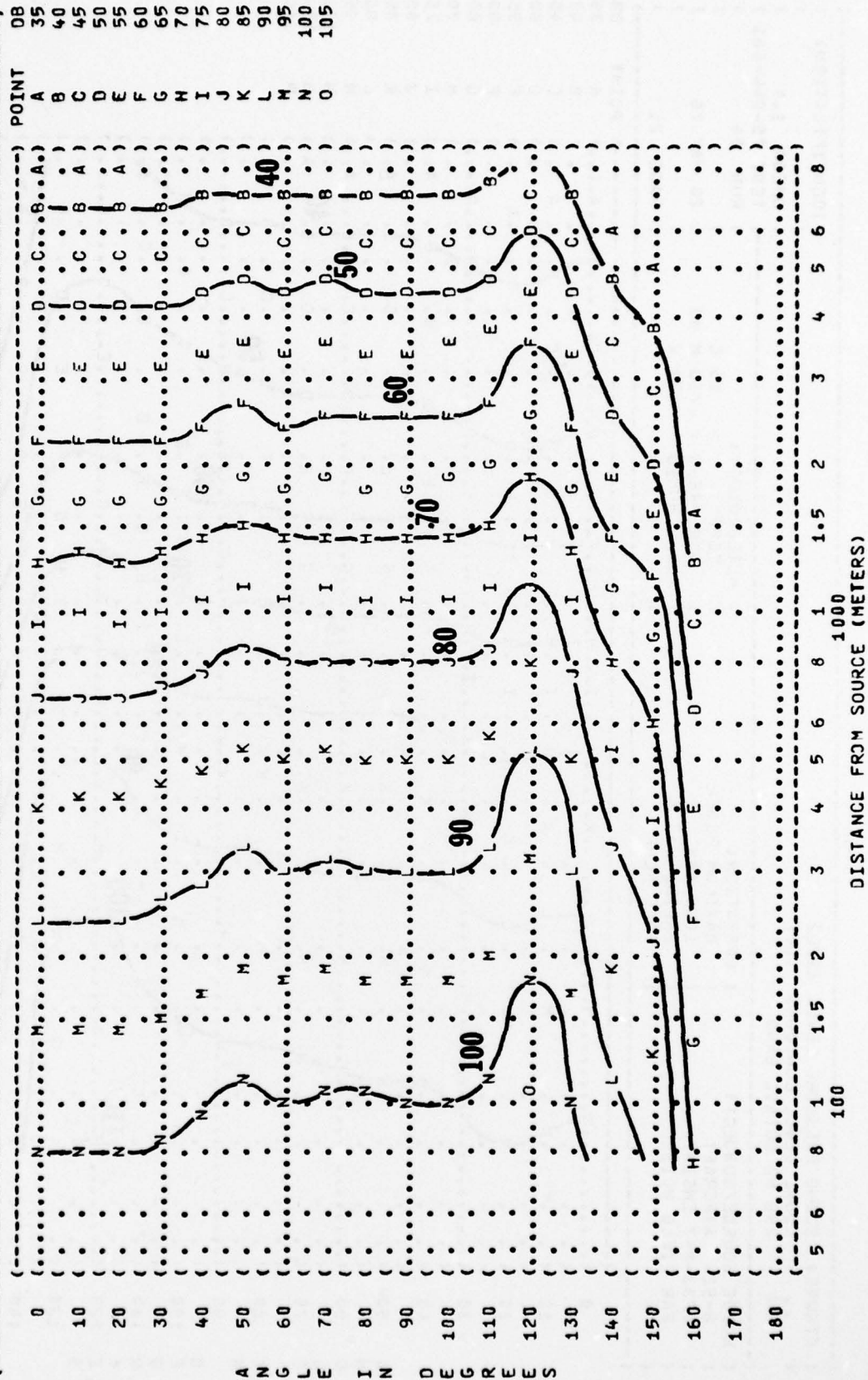
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DISTANCE FROM SOURCE (METERS)

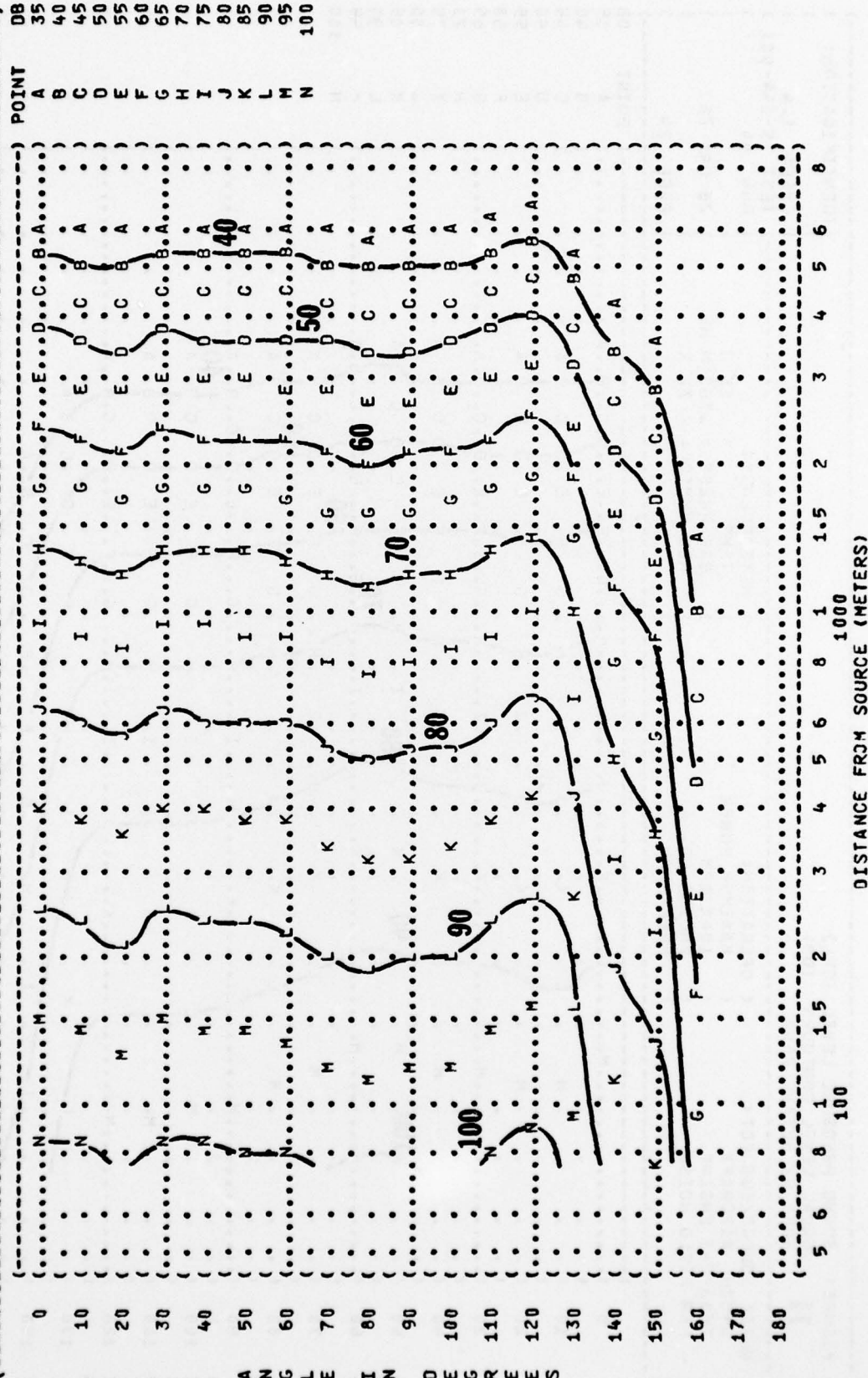
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 (EQUAL LEVEL CONTOURS (DB)
 (**11** 250 HZ OCTAVE BAND
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 ()
 () OMEGA 1.4
 () TEST 75-044-001
 () RUN 04
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:
 () OPERATION:) TEMP = 15 C
 () MAXIMUM POWER) BAR PRESS = .760 M HG
 () 8-52H AIRCRAFT) 104% RPM) REL HUMID = 70 %
 () TF33-P-3 ENGINE) ENGINE N3. 4)
 () FAR FIELD NOISE) FREE FLOW)
 () PAGE 21



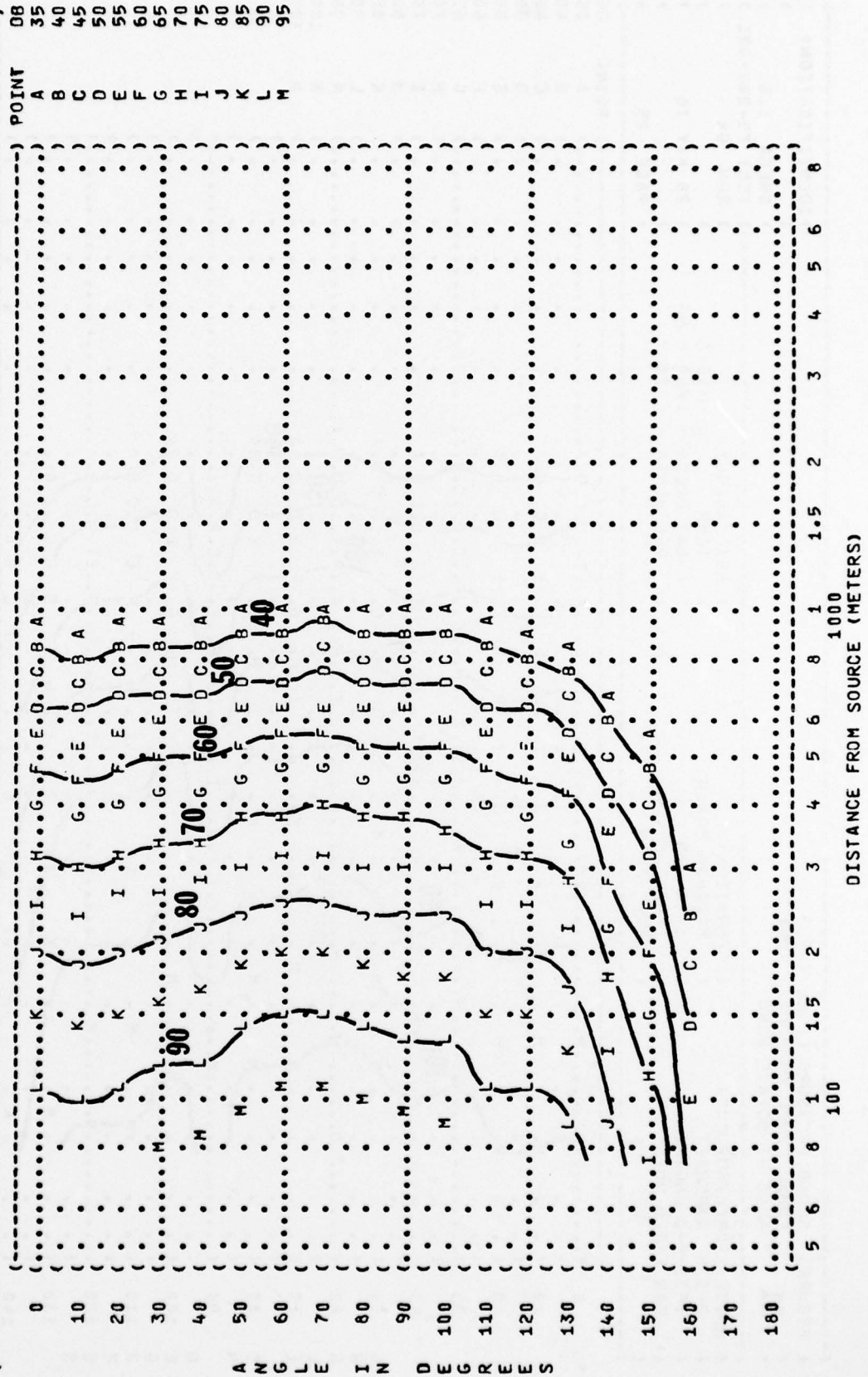
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( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION:
( EQUAL LEVEL CONTOURS (DB) ) )
( 11 ) OMEGA 1.4
( 500 HZ OCTAVE BAND ) TEST 75-044-001
( NOISE SOURCE/SUBJECT: ) RUN 04
( 8-52H AIRCRAFT ) TEMPERATURE = 15 C
( TF33-P-3 ENGINE ) BAR PRESS = .760 M HG
( FAR FIELD NOISE ) REL HUMID = 70 %
( ) )
( ) ) PAGE 22
(-----)
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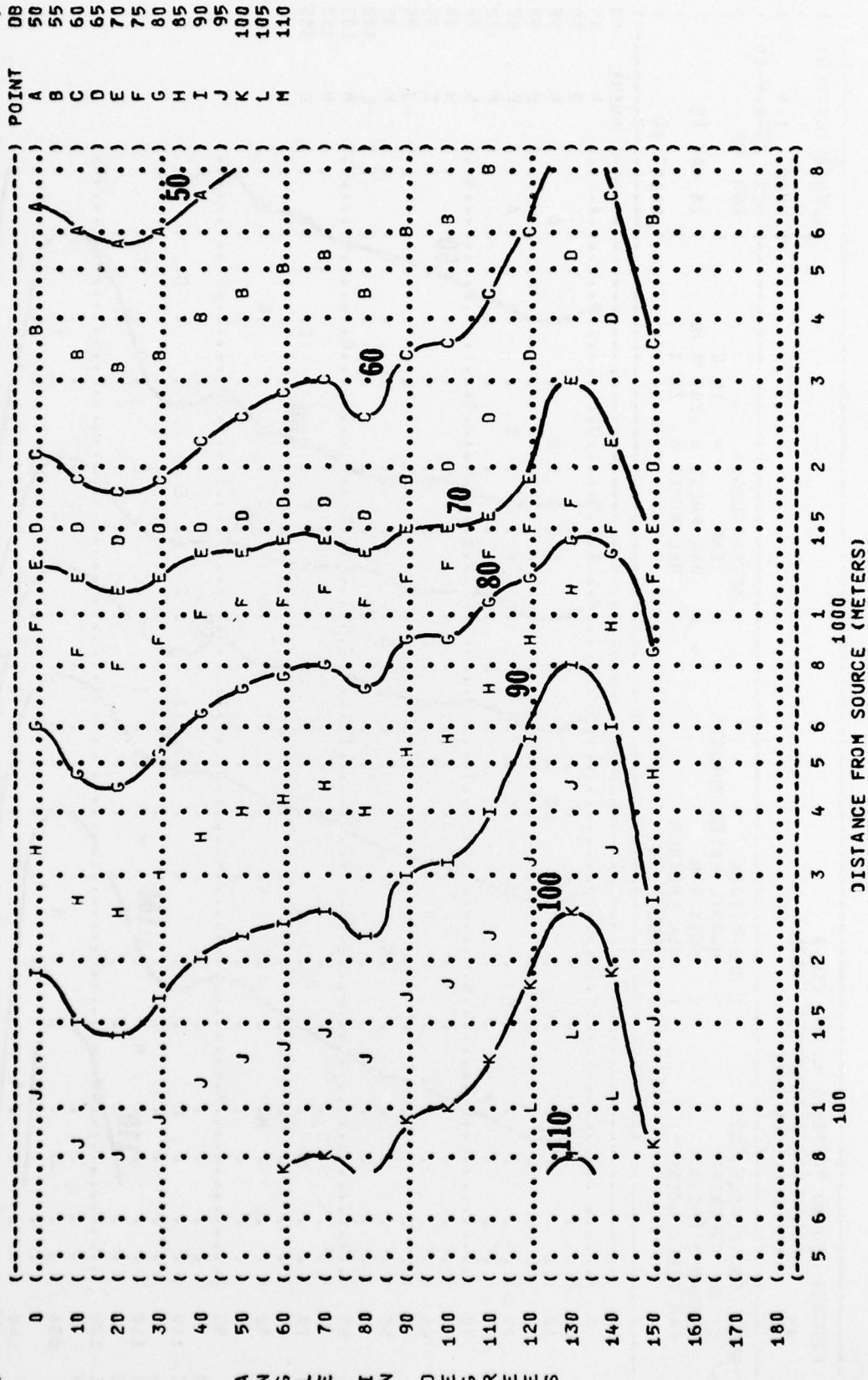
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 (TF33-P-3 ENGINE
 (FAR FIELD NOISE
 (OPERATION:
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 (104% RPM
 (ENGINE NC. 4
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 H HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 04
 (28 MAY 76
 (PAGE 23



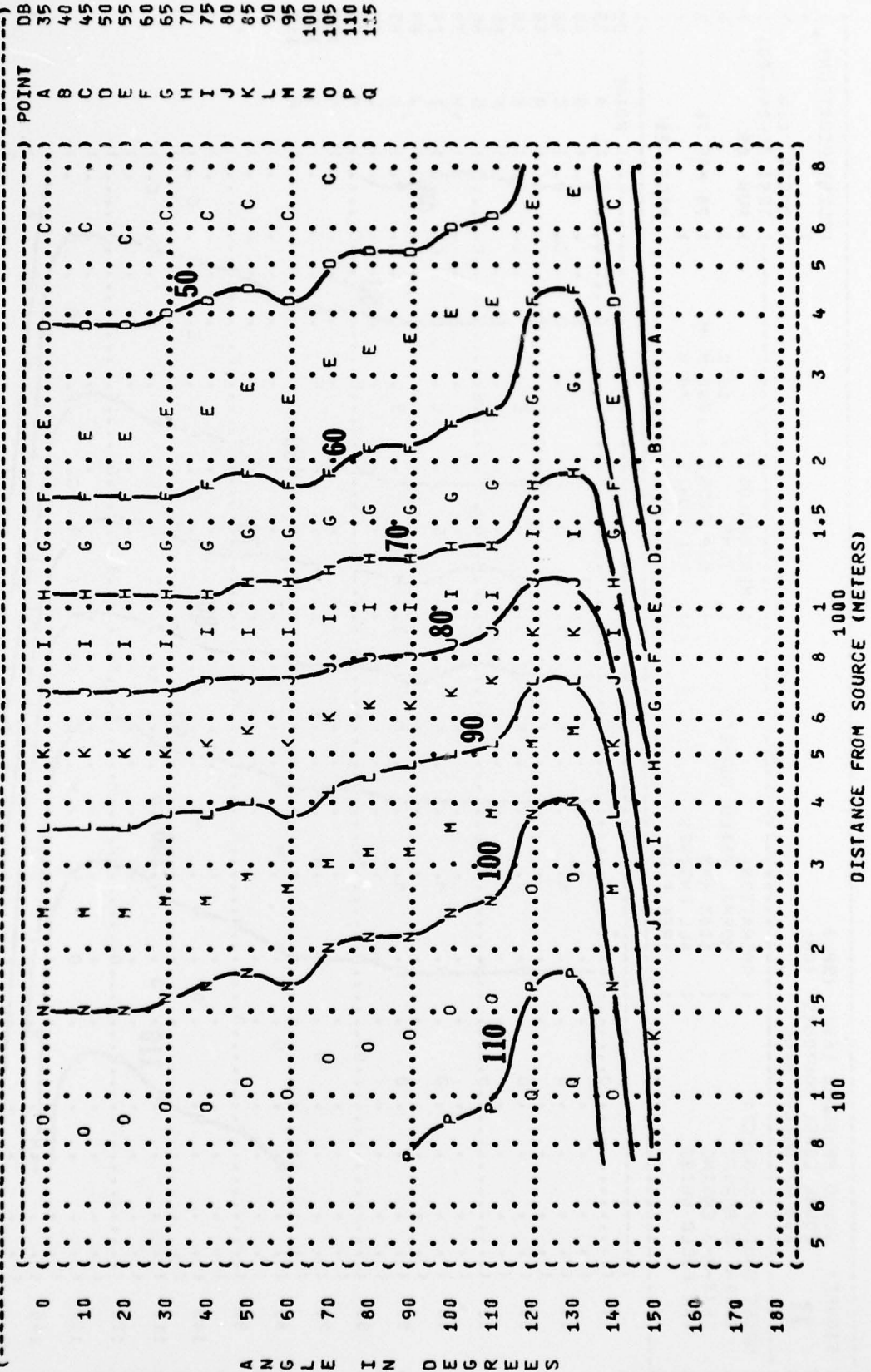
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 (TF33-P-3 ENGINE
 (FAR FIELD NOISE
 (OPERATION:
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 (104% RPM
 (ENGINE NO. 4
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 04
 (28 MAY 76
 (PAGE 26



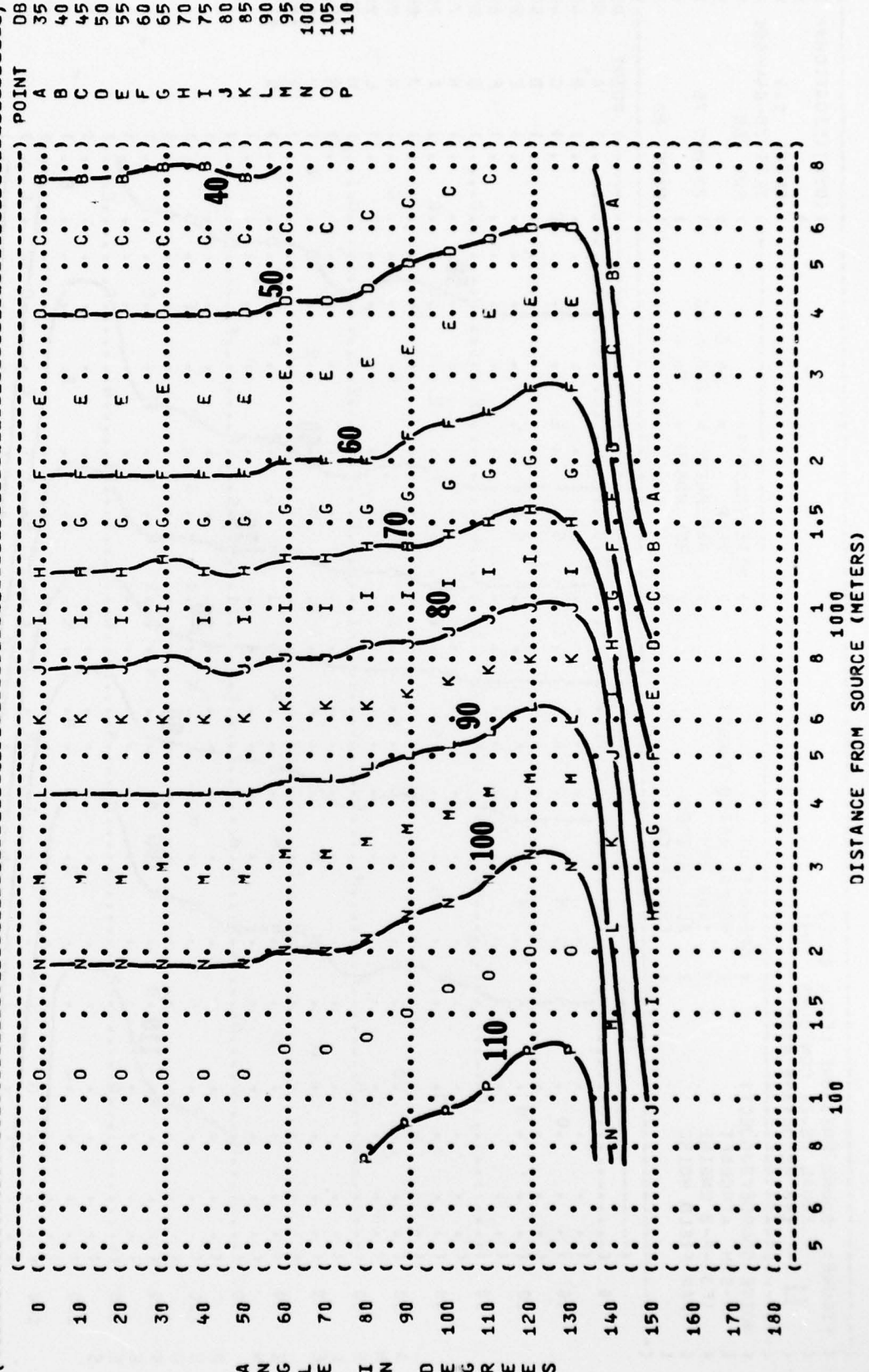
(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (31.5 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (B-52H AIRCRAFT)
 (TF33-P-3 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (NORMAL RATED THRUST)
 (100% RPM)
 (ALL ENGINES)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
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 (TEST 75-044-001)
 (RUN 05)
 (28 MAY 76)
 (PAGE 18)



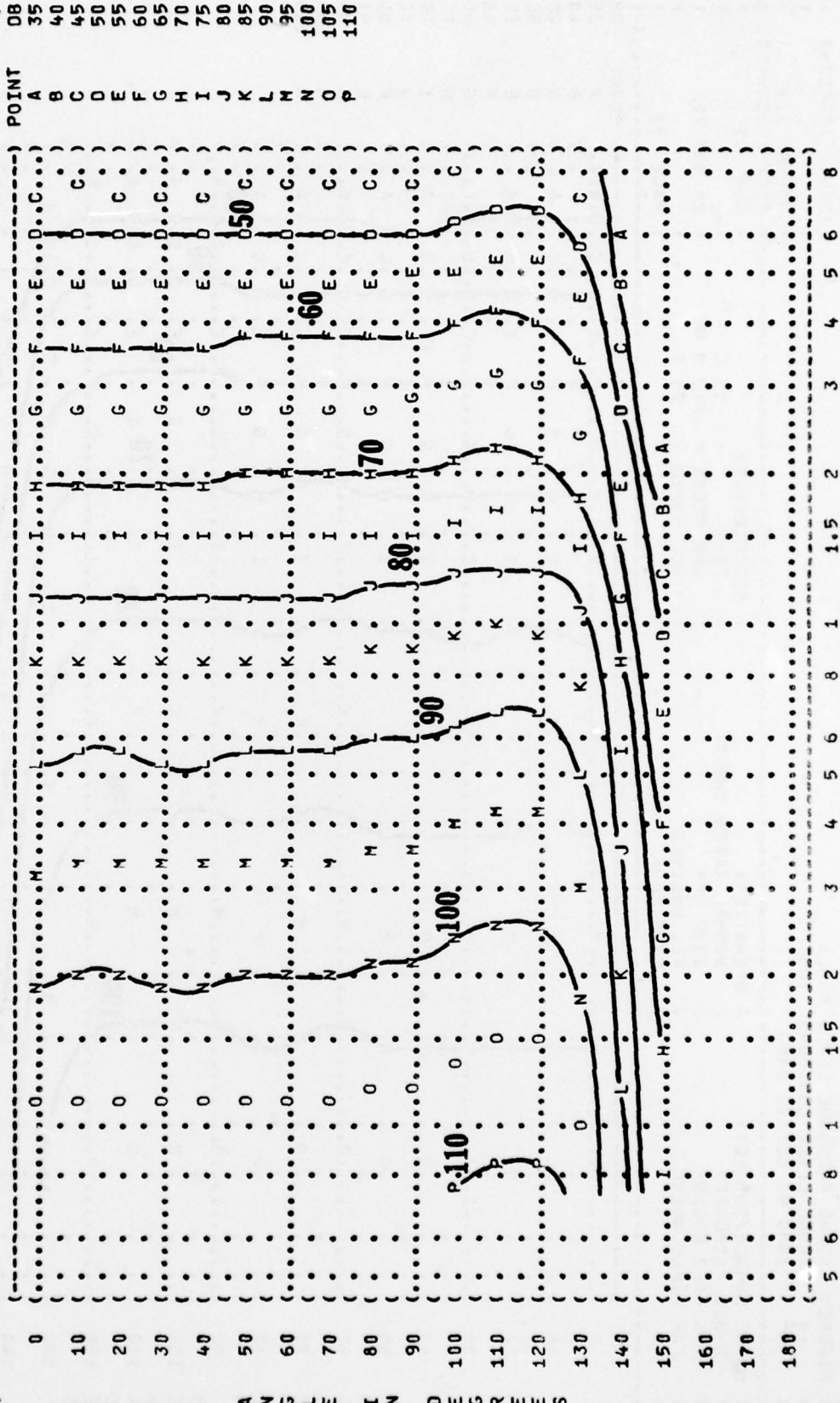
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 (ALL ENGINES
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 05
 (28 MAY 76
 (PAGE 20



(FIGURE: SOUND PRESSURE LEVEL {SPL})
 (11) EQUAL LEVEL CONTOURS (DB)
 (250 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (B-52H AIRCRAFT)
 (TF33-P-3 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (NORMAL RATED THRUST)
 (100% RPM)
 (ALL ENGINES)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-044-001)
 (RUN 05)
 (28 MAY 76)
 (PAGE 21)

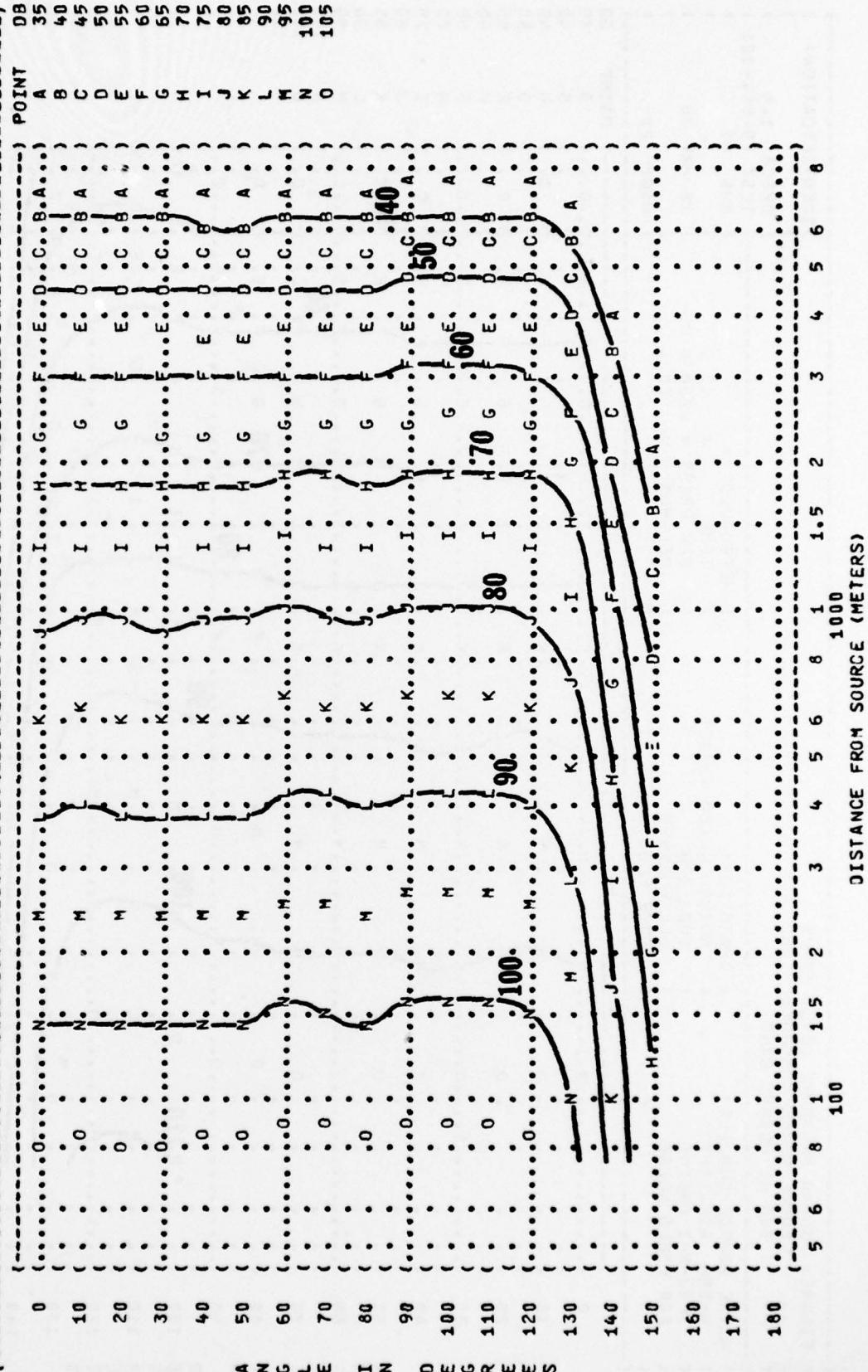


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 (EQUAL LEVEL CONTOURS (DB)
 (500 HZ OCTAVE BAND
 (11
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 (TF33-P-3 ENGINE
 (FAR FIELD NOISE
 (OPERATION:
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 (100% RPM
 (ALL ENGINES
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
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 (TEST 75-044-001
 (RUN 05
 (28 MAY 76
 (PAGE 22

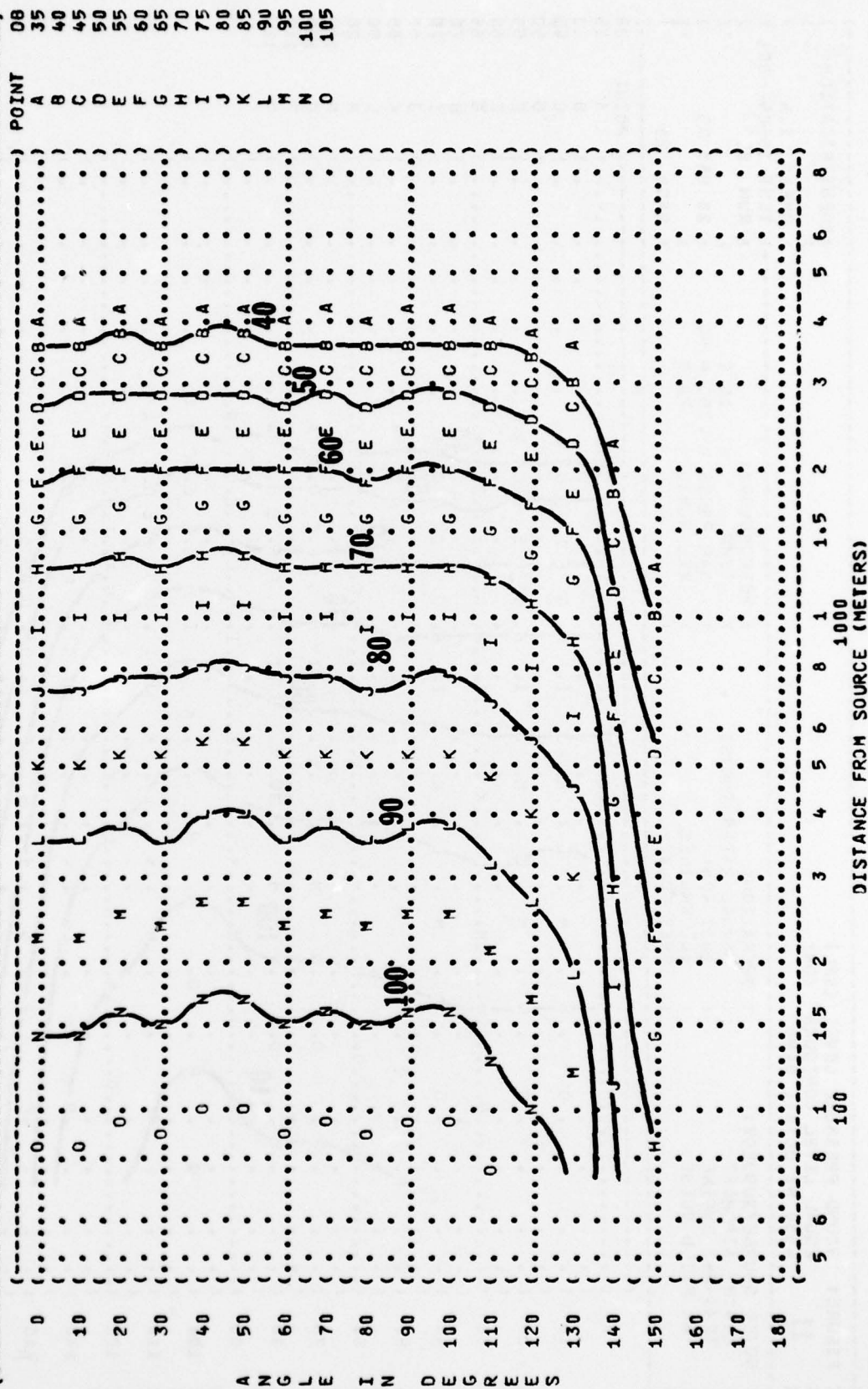


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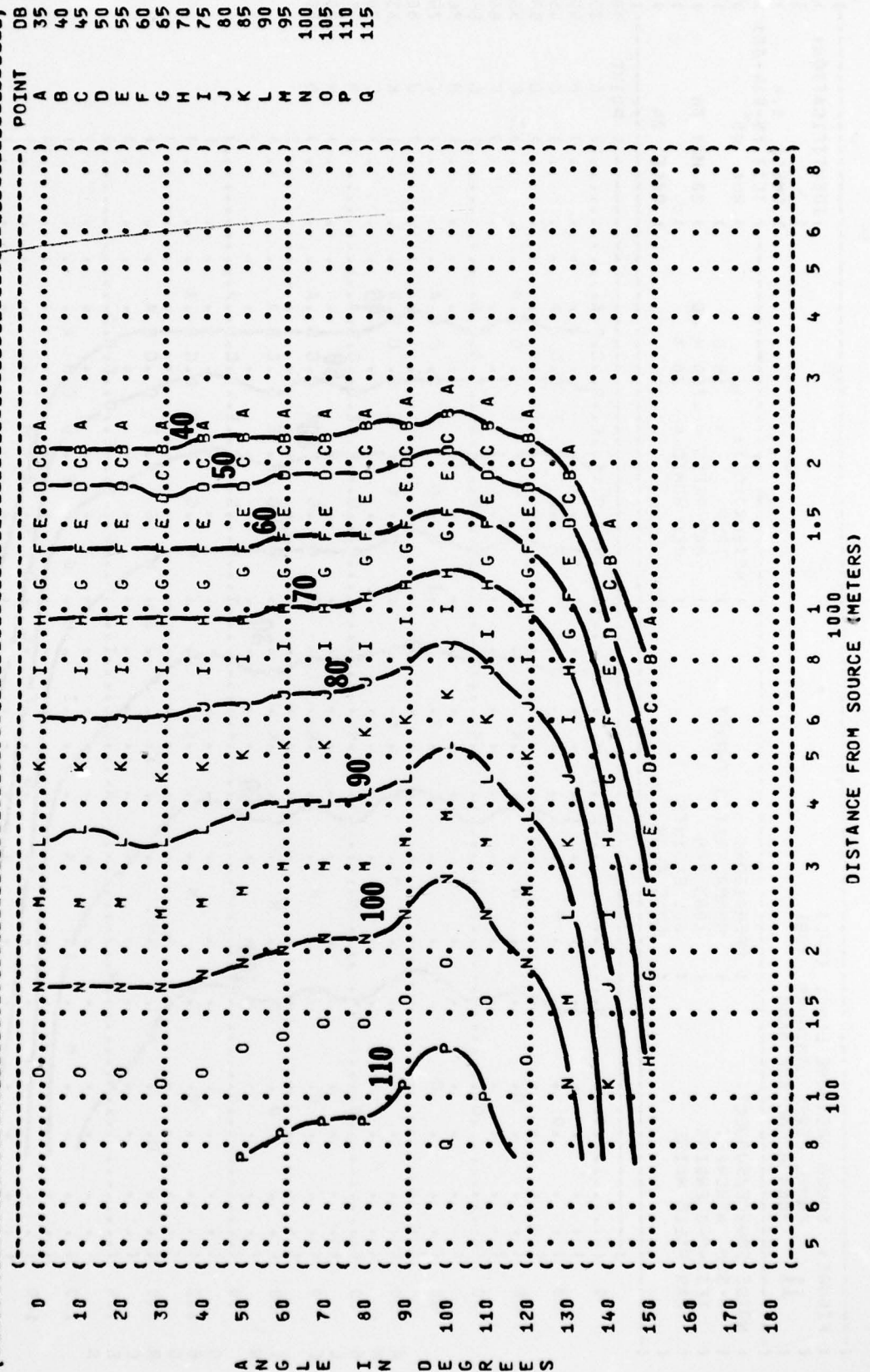
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 (TEST 75-044-001
 (RUN 05
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (28 MAY 76
 (PAGE 23



(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (11 EQUAL LEVEL CONTOURS (DB))
 (2000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (8-52H AIRCRAFT)
 (TF33-P-3 ENGINE)
 (FAR FIELD NOISE)
 (OPERATION:)
 (NORMAL RATED THRUST)
 (100% RPM)
 (ALL ENGINES)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-044-001)
 (RUN 05)
 (28 MAY 76)
 (PAGE 24)



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (11 EQUAL LEVEL CONTOURS (DB)
 (4000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
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 (100% RPM
 (ALL ENGINES
 (FREE FLOW
 (METEOROLOGY:
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 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-044-001
 (RUN 05
 (28 MAY 76
 (PAGE 25



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (8000 HZ OCTAVE BAND
 (11
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 (TEST 75-044-001
 (RUN 05
 (28 MAY 76
 (PAGE 26

